COMPARATIVE NEGLIGENCE AND JURY BEHAVIOR

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I. INTRODUCTION

The comparative negligence doctrine is a rule in our system of civil justice which allows partial compensation of plaintiffs who are partly at fault for their own injuries. Forty-one states have a comparative negligence law today, while the remaining nine operate under an older law (called contributory negligence or "contrib"), which denies plaintiffs such partial compensation. Many of the states with the new law have just recently switched, and some of the nine are currently considering a change. By analyzing jury decisions in San Francisco under both the old and new law, this study measures the effects of comparative negligence law on plaintiffs' awards.

DEFINITION OF TERMS

The law of comparative negligence instructs jurors on the apportionment of damage awards when the plaintiff is partially at fault. The comparative law asks the jury to divide damages between the plaintiff and negligent defendants according to relative fault. Thus, a plaintiff 50 percent responsible for his own injuries receives half of his total damages, and one 10 percent responsible receives 90 percent.

The predecessor to comparative negligence, still existing in 9 states, is the contributory negligence law. Dubbed the "all or nothing rule," the "contrib" law states that plaintiffs who in any way contribute to their own injuries, receive nothing. Only those without fault themselves can obtain compensation through the civil justice system.

IMPORTANCE OF NEGLIGENCE LAWS

The new law emerged from a sense the old law was overly harsh. To take an extreme example, under the old contrib doctrine, someone who crossed over the center line and hit you head-on in an auto accident, could argue he owed nothing because you were not paying enough attention to get out of his way in time.

While community standards have long tended toward the comparative rule, it has become formal in most states in only the last 10 to 15 years. Policy makers, particularly legislatures, have shown considerable reluctance in switching, despite modern notions of fairness.

Why the inaction on the part of lawmakers? One explanation is the potentially enormous redistributive effect the comparative law could have, because the comparative principle has wide applicability in the civil justice system. It is relevant not only in auto accidents but also in product liability, worker injury, injury on property, street hazard and common carrier cases. Further, participants in the civil justice system view it as an important issue in most civil suits. A change to the comparative principle, some have argued, could substantially increase awards paid to plaintiffs, overload the civil justice system with new claimants, and result in considerably higher insurance rates.

PURPOSE OF RESEARCH

Despite the potential large impact and the many states with some experience, the effects of the comparative law have received little empirical investigation. Court data systems simply do not provide the information an investigation would require. However, the Institute for Civil Justice compiled trial information published in a weekly newsletter by an independent jury verdict reporting service in California. The resulting data file provides, for the first time, comprehensive information about lawsuits tried to juries.

Using that data file, this research examines the effect of the comparative law. The research analyzes 675 auto accident trials in San Francisco County in the 1970s. California adopted the comparative negligence law in 1975, so about half of these trials took place under the old contrib law, and half under the new comparative law.

The research concerns a single area of liability to facilitate comparison of the degree of negligence among parties. Auto accidents constitute a natural choice for two reasons. First, partial plaintiff negligence is a frequent issue in such trials. Second, auto accidents

dominate civil litigation, comprising over 40 percent of all trials in San Francisco in the 1970s.

The study focuses on a fundamental question: how much did the comparative law increase the amount plaintiffs receive from taking their case to trial? If the increase is large, then policymakers in the nine states still operating under the old law may want to weigh carefully the consequences of making a change. On the other hand, if the increase is small, policymakers could easily accomodate a change to the comparative negligence law.

The answer is that the actual effect of switching to comparative is much smaller than the potential effect because juries don't strictly follow either law. In the contrib period, analysis suggests that juries in part operated a de facto comparative system, mitigating the effect of the change. In the comparative period, juries further reduced the effect of the new law, by over-penalizing partially negligent plaintiffs, so that they got less than the law intended. While the deviance in behavior from the old law appears to derive from a conflict with modern societal values, deviance in behavior from the new law appears to stem from faulty implementation.

Despite the forces that reduced comparative's potential effect, the new law still increased the expected trial award by an estimated 20 percent. That change considerably exceeds current conventional wisdom and past estimates of comparative's actual effect. Though several arguments suggest the estimate is a maximum, the results argue for policymakers taking a closer look at the effects of a comparative law in their state.

GUIDE TO REMAINDER OF REPORT

Conducting the research required comparing the experience of plaintiffs before and after the comparative law took effect. To take into account all the ways cases might differ in the before and after periods, I used multivariate analyses, modeling jury verdicts as a function of the seriousness of the injury, plaintiff and defendant and lawsuit characteristics, and measures of the relative negligence of the

parties. Adequately controlling for negligence lies at the heart of this research effort.[1]

Chapter 2 provides background information critical to a full understanding of the empirical analysis. It seeks to deepen the reader's understanding of the old and new law, the concerns about its effect and practicality, and how change to date has come about. The chapter also documents previous efforts at empirical research in this area. Chapter 3 documents and bounds the large potential effect of changing to a comparative negligence law, showing how actual results depend critically on how juries respond to the laws. Chapter 4 details model design and analysis, especially the construction of scales measuring the relative negligence of the plaintiff. Chapter 5 shows analysis results for San Francisco, predicting the effect of the comparative law on both juries' liability and award decisions. Chapter 6 pulls together the various findings for a bottom line answer to the question of the effect of the new law on plaintiffs' expected award. Finally, Chapter 7 discusses policy implications that derive from the conclusions.

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[1] See reports by Peterson (1984), and Chin and Peterson (forthcoming) for documentation of the development of injury, party, and case characteristics.

II. NEGLIGENCE LAWS

This section provides the motivation and necessary background for the analysis to follow. First, it discusses the different types of comparative laws and how they work in practice. Second, it details the slow development of the comparative doctrine in the United States, and suggests that a lack of information on the potentially large impact of the law was at least partially responsible.[1] Finally, it reviews the meager empirical literature on the effects of the law and the necessarily small impact that literature had on policy decisions.

COMPARATIVE NEGLIGENCE LAWS AND HOW THEY WORK

The comparative law has actually three basic forms, differing in the degree to which fault is used to apportion damages. The so-called "pure" rule of comparative negligence, the type adopted in California and 12 other states across the nation, allows injured parties to collect at least some damages regardless of their extent of fault.[2] Thus a plaintiff 99 percent responsible for his injury is entitled to collect the 1 percent from the other party. The more common "modified" version of the law, in effect in 27 states, permits a plaintiff recovery as long as his negligence does not exceed that of the defendant.[3] The third form, the "slight-gross" version, in effect in only 2 states, permits a recovery when the lack of due care by the plaintiff is "slight" and that of the defendant "gross" by comparison. Damages are reduced "in accordance" with the negligence attributable to the plaintiff.

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[1] Many excellent texts discuss the nature and history of the comparative law. These include Heft & Heft (1978 & 1983 supplement), Prosser (1971), and Turk (1950).

[2] Providing, of course, that a defendant is liable.

[3] There are actually two types of "modified" comparative laws, a "49 percent" law and a "50 percent" law; they differ on the issue of whether a plaintiff exactly half responsible can collect.

These rules are important to distinguish because they may have different impacts on plaintiff awards. For example, if the major portion of plaintiff gain occurs in cases of high plaintiff negligence, then a modified rule prevents those gains from occurring. Examining outcomes under a pure comparative law, as in San Francisco, allows study of comparative effects over the whole range of plaintiff negligence hypotheses. Hypotheses are articulated in the next chapter.

The cornerstone to the implementation of the contributory negligence law is the special verdict, the mechanism used by courts to supervise the implementation of the law and insure its integrity. Special verdicts require the jury to spell out the apportionment decisions they have made; that is, juries must specify whether they determined the plaintiff partially negligent, and if so, the exact percentage fault assigned. Most states, including California, use special verdicts. Special verdicts provide a valuable basis for this research effort because they provide precise information about jury decisions on the comparative issue.

The presentation and form of the special verdict to juries varies considerably by state as to complexity.[4] Some ask juries a rather long list of detailed questions, while others require a simple percentage of plaintiff fault. All, however, ask the jury for the gross award, the total damages the plaintiff incurred, as opposed to the net award, damages after subtraction for the plaintiff's negligence. By leaving the final calculation of the award to the court, the jury is encouraged to deal only with facts, and render fair and impartial decisions as to the negligence of each party. However, as I discuss in Chapter 5, the results of this research suggest that leaving the mathematics to the court ends up penalizing plaintiffs.

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[4] For a thorough discussion of special verdicts, see Heft and Heft (1978) Chap.8.

HISTORY OF THE CHANGE TO COMPARATIVE NEGLIGENCE

Comparative negligence is a fault concept aimed at obtaining fair outcomes to disputes over responsibility for injuries. It says simply that each person should pay for an injury to the extent that he was the cause. While right in line with modern notions of fairness, the values expressed in the concept haven't always dominated in society. The predecessor to comparative negligence was the common law of contributory negligence, which essentially said that to gain access to the civil courts one must come with "clean hands," that, is, without having partially caused one's own injuries. First a part of American Jurisprudence in the early 19th century, when laissez faire and rugged individualism were the prevailing philosophies, contributory negligence throws on the individual the primary burden of protecting his own interest. "To hold otherwise would be to unduly burden business and enterprise, to make of those engaged therein the guardians of those apt to be affected by their operation, and at the same time to rob of self reliance... the latter by accustoming them to look to others for protection..." (Bohlen, *Harvard Law Review*, 1908).

The changing values of the 20th century saw the results of contributory negligence as overly harsh and often unjust. Only a minority of claimants, it was found, could claim they had not contributed to their injuries. As a result, many doctrines of common law, such as the one of last clear chance, arose as exceptions to the contributory rule. For a time, these exceptions served to make fault laws inconsistent.[5] However, the culmination of the movement to mitigate against the harshness of contrib's complete bar to recovery led to the all-inclusive comparative law.

Congress first adopted a comparative negligence rule for injuries sustained by railroad employees in a 1908 statute. Subsequently, comparative became commonplace in federal courts, applying under the Federal Employee's Liability Act, the Jones Act, and generally in admiralty law.

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[5] The doctrine of last clear chance, for example, allowed a plaintiff full recovery of damages despite his carelessness, but only when the defendant's negligent act occurred subsequent in time to the plaintiff's.

The states, however, where the great bulk of civil litigation takes place, showed much less enthusiasm for switching to the comparative rule. Mississippi became the first state to adopt comparative in 1911. However the remaining states were quite slow to change. When, in the 1950s, most common law nations, including England, Canada, New Zealand and Australia had long since adopted the comparative doctrine, state legislatures in the United States were regularly defeating legislation calling for the institution of comparative. Up until the 1970s, only 10 states had a comparative law in effect. See Table 2.1. Then, in the first half of the 1970s, 17 states switched, half in 1973 alone. Since then, the rate of change has slowed considerably.

Two questions arise. First, why had legislatures failed to act before the 1970s and why do a few states still cling to the old rule? Second, why the sudden switch for many states in the early 1970s? As to the first, I'll argue below that the lack of reliable information on effects has contributed to the states' inaction. As to the second, it appears many states changed in the early 1970s as part of a compromise

Table 2.1

NUMBER OF STATES ADOPTING A COMPARATIVE NEGLIGENCE RULE
BY PERIOD AND TYPE OF LAW

	Number of States By Type of Law [a]			
Time Period	Pure	Modified	Slight	All
Before 1970	2	6	2	10
1970-1974	3	14	0	17
1975-1979	5	3	0	8
1980-Present	3	3	0	6
Total	13	26	2	41

[a] See text for explanation of law types.
Source: Compiled from Hammitt (1983) and Heft and Heft (1983).

to fend off political pressure to institute "no-fault" auto systems, which would take fault concepts out of the picture altogether.[6] Credibility is lent to this argument by the fact that after the pressure to adopt "no-fault" subsided, legislatures once again appeared to "drag their feet." In fact, after 1975, state courts, perhaps impatient with the progress of their legislatures, began to play a major role in the trend toward comparative. Table 2.2 shows courts responsible for half the changes since 1975, while almost never acting before that time.

Today, 9 states still operate under the original contributory doctrine: Alabama, Arizona, Delaware, Kentucky, Maryland, North and South Carolina, Tennessee, and Virginia. At least one of these states, North Carolina, is actively considering a change to comparative.[7] The results of this study should shed some light on the concerns of policymakers in those states.

Table 2.2

NUMBER OF STATES ADOPTING A COMPARATIVE NEGLIGENCE RULE BY PERIOD AND METHOD OF ADOPTION

	Number of States By Method of Adoption	
Time Period	Statute	Court Decision
Before 1970	9	1
1970-1974	16	1
1975-Present	7	7
Total	32	9

Source: Compiled from Hammitt (1983) and Heft and Heft (1983).

[6] See Wade (1980) and Fleming (1976).

[7] In fact, The Institute for Civil Justice received an inquiry from North Carolina officials, seeking empirical findings on comparative's effect.

POLICYMAKERS' CONCERNS

Policymakers, particularly legislatures, have shown considerable reluctance in switching to comparative, despite modern notions of fairness and calls for change. I briefly discuss the full spectrum of those concerns below.

Policymakers' concerns might be divided into four areas. Two of these, the effect of comparative on claimants' compensation and the resulting problems with court administration, are at least partially addressed by this study. Two other areas of concern--how comparative affects the deterrence of careless behavior, and the fairness of certain outcomes under comparative--also merit discussion, though they are beyond the scope of this report.[8]

Compensation

Comparative allows more plaintiffs to receive awards. How many more plaintiffs will actually receive awards, and how much they will receive is only a matter of speculation; few hard facts are available even to this day (see details in the next section). However, the potential is quite large, as plaintiffs' carelessness has become a major defense in the courtroom. Issues of plaintiffs' contribution to injuries occurs in a wide range of cases, including automobile and common carrier accidents, worker injury, product liability, injury on property, and street hazard cases. Thus changing the rule regarding plaintiff negligence could have wide ranging effects on who pays for accidents in society.

Policymakers would, of course, want to consider carefully any large redistribution of trial awards, but they also appreciate that the dollar volume at stake goes far beyond that represented at trial. Settlements represent over 90 percent of the civil litigation caseload, and what

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[8] Many authors review the arguments for and against a comparative law, including the general texts referenced above in footnote 1. For another discussion see Schwartz (1978). Authors that argue the "pro" side of the comparative law include Prosser (1953), Fleming (1976), Humphrey, et. al. (1981-2), and Kuhn (1980). Arguments against the institution of the new law can be reviewed first-hand in some of the older insurance and defense literature, in Gilmore (1956), Benson (1956), Powell (1957), Harkavy (1957) and Ghiardi (1969).

happens at trial influences what happens with settlements,[9] and in turn who decides to file a lawsuit in the first place. Thus, an increase in what a plaintiff might expect to receive at trial could have a large multiplier effect on dollar volume in the rest of the system. Significant increases in automobile insurance rates, for example, could result.

Court Workload and Administration

A greater expected return could also end up congesting courts as more and more plaintiffs file suits and as the risk of defendant verdicts lessens with the comparative law. Some believe that a sense of entitlement or expectancy might even result, generating a large number of both small and nuisance claims.[10] Further, trials might take longer as the new issue of damage apportionment requires specific consideration, and appeals might become more frequent, as apportionment becomes a new issue for appeal.

Arguments about comparative's effect on court workload are not all on one side. To the contrary, advocates of the shift to comparative negligence see it as a solution to over-congested trial dockets.[11] They see fewer and shorter trials, and quicker and easier settlements once defendants can no longer hope for a strict interpretation of the contrib law and plaintiffs no longer have to take a case to trial to, in effect, nullify the rule.

Deterrence

The comparative doctrine emerged largely to improve fairness in the system. The doctrine was not intended to address other goals of the civil justice system, such as the deterrence of negligent behavior. In fact, some opponents of the comparative law have argued that the comparative law would eliminate the incentive the old law provided for people to take greater care in their actions.[12] Proponents counter that

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[9] For a discussion of some of those influences, see Priest and Klein (1983).

[10] For example, see report of the Legislative Research Commission in North Carolina (1981), p. 7.

[11] For example, see Kuhn (1980), p. 770.

[12] See for example, Powell (1957).

negligent plaintiffs rarely consider possible loss of recovery, and that, by putting the responsibility solely on plaintiffs, the contributory law encourages careless acts by defendants.[13] Further, some have argued that neither comparative nor contributory negligence maximizes the deterrent effect of a fault rule.[14]

Fairness

Though, today, few would argue with the values behind the comparative rule, many still call the "pure" form of the rule unjust, because it allows those more at fault in an accident to collect from those less at fault. These critics support the modified form of comparative law which denies recovery to anyone more than 50 percent responsible for an accident. Others argue, however, that a modified rule denies the very concept it invokes, that parties should pay according to their relative fault.[15] That the majority of comparative states have adopted the modified rule, however, attests to the acceptance of the first view.

True to the spirit of this study, some authors claim jury behavior will affect comparative's outcomes. However their contentions differ from those of comparative's proponents. These authors claim that the comparative law leads to unfair outcomes; that the old contrib rule helps restrain sympathetic juries from giving awards to plaintiffs who don't deserve it. Some research suggests that juries' decisions only rarely differ from what judges would decide,[16] but the question of how juries behave has, in general, received little empirical attention.

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[13] See O'Connell (1979).

[14] Calabresi (1975) states that both laws ask the wrong questions if deterrence is the goal. According to O'Connell, 1979, maximizing the deterent effect would require placing the entire burden of payment on negligent defendants, who typically are better able and more motivated to undertake preventative measures.

[15] See opinion in *Li vs. Yellow Cab Company* (1975), the case that brought the "pure" comparative doctrine to California.

[16] See "A Report on the Jury Project of the University of Chicago Law School" (1957).

Other objections center around practical difficulties in using the comparative law under a jury system. Some contend it is unrealistic to ask the jury to make damage apportionments, especially in the more complex cases, in which several parties of the litigation or even non-parties are involved, and when counter claims and third party actions are asserted. Over the years experience has answered most of these objections, as states have developed procedures to insure reasonable jury decisions in complex cases. However, the results of this research suggest that the way comparative is implemented can significantly affect how juries respond.

CRITICAL REVIEW OF PREVIOUS RESEARCH

The questions concerning increased litigation and insurance costs have yet to receive adequate empirical answers, despite the many states with comparative experience. Of the 32 states that have converted in the last decade and a half, nearly all have enough experience to know that the new standard does not bring about "disaster" or "chaos," but none can confidently assert whether the effects of comparative have been large or small, or even whether plaintiffs or defendants have benefited.

Perhaps the sparsity of empirical data should not come as such a surprise, as the design and completion of studies to collect the data is a mammoth undertaking. Further, as one author pointed out[17] more than a third of the states with comparative laws have had the analysis waters muddied by the passage of no-fault legislation.

Nonetheless, the lack of acceptable measurement of effects may help explain the slowness with which states have converted to the comparative negligence law. Consider, for example the perspective of the 1981 General Assembly of North Carolina, which asked its legislative research commission to report on other states' experience with the comparative law. The commission contacted the insurance commissioner of the 35 states with a comparative law at that time, and all the major national insurance associations. Their findings? While they received considerable literature suggesting that comparative raised insurance rates, the commission found "no recent comprehensive in-depth study on

[17] See Hunt (1980).

the actual experience of any state."[18] Obviously, empirical analysis did little to enlighten the Assembly. North Carolina, by the way, remains a contributory negligence state.

In this section I review the few existing empirical studies of the effect of the comparative law on the worth of a case. The studies differ considerably in scope, method and focus. Some look at plaintiffs' compensation in jury trials, some in settlements. Others approach the question by analyzing insurance rates directly. Some studies are cross sectional, others longitudinal, and so forth.

Special verdicts might appear the most accessible data on the comparative law, as they provide specific jury decisions about plaintiff negligence. However, not even this information is readily available; in fact, the only report I found came from a jury verdicts reporting service in Cook County, Illinois, where comparative negligence has been the rule since June, 1981.[19] At the request of subscribers, the service undertook a special study of the first 1,076 jury trials under the comparative law in Cook County and downstate. Their findings agreed with what theory would predict. First, the increase in the percent plaintiff victory increased from about 50 percent to 59 percent. Second, for the 41 percent of the cases, awards were reduced by an average of 43 percent.

The detailed breakdowns of special verdicts for over 30 separate case types provide the most useful tabulations in the Illinois report, especially for civil justice practitioners there. However, as a means for estimating the net effect of the law, the data cannot be conclusive for two reasons. First, the increase in the likelihood of a plaintiff win might indicate a selection effect, rather than a liability effect. If, for example, the law encourages more negligent plaintiffs and defendants to fight about the amount of the award in court rather than settle, the increased frequency of plaintiff wins might merely reflect a different case mix at trial, not greater plaintiff success in receiving compensation.

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[18] Legislative Research Commission (1981).

[19] "Comparative Negligence Case Evaluation Manual and Summary" (1983).

The second reason special verdicts do not tell us the true effect of comparative is that prior jury behavior is uncertain. If, as many participants in the civil justice system contend, juries employed a rough comparative system under the old contrib law, then award reductions might not represent a change, but only make specific what juries have done for some time. In the absence of data on jury behavior under contrib, the effect of the new law can, at most, be bounded as to liability.[20]

Studies that attempt to overcome the problems of case mix and jury behavior are of two types: longitudinal and cross sectional. I consider each in turn.

Longitudinal Studies

Two studies of the Arkansas experience with both the pure and modified form of comparative negligence[21] solicited opinions from Arkansas lawyers and judges based on their direct experience in handling negligence claims. Results in both studies suggest that legislatures ought to rule out problems of court congestion and administration as potential problems of a comparative law, because they do not appear to have occurred. However, the studies also "refute the commonly expressed view that a shift to comparative does not alter the value of personal injury cases," since both judges and lawyers contend that a greater proportion of plaintiffs win both settlements and trial awards. While based on opinion rather than trial outcomes, these studies suggest resources for analysis of comparative can best be used for estimating, as is done in this paper, the precise change in plaintiffs' awards.

More recent closed claim surveys do estimate the change in plaintiff awards, at least for settlements. A study by the Insurance Services Office (ISO)[22] compared actual settlements in some 2,000 auto

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[20] Such an analysis appears in Shanley and Peterson (1983), Chap. IV.

[21] Rosenberg (1959), and "Comparative Negligence--A Survey of the Arkansas Experience," (1969).

[22] Mentioned in the report of the Legislative Research Commission of North Carolina (1981), p. 16-17; according to the ISO, not formally published.

accident claims in the first year of comparative in California, with an estimate of what would have been the amount under the old contrib law. The authors predicted an approximate 5 percent increase in settlements due to the law, and assumed that the same percentage increase should occur in insurance rates. This study of bargaining behavior by litigants is the most appropriate for comparison with the work done here on jury verdicts. However, the data appear to more closely reflect expected, rather than actual jury behavior, as most of the settlements occurred before juries had much experience with apportionment decisions. Further, according to the ISO, the study has not been published.

Another closed claim survey, this one conducted by 13 major insurers in Louisiana,[23] examined 1292 closed liability claims and estimated auto insurance rates would rise 17 percent. However, I consider this study of questionable reliability for two reasons. First, in this case, insurance personnel had to work from an "actual" figure under contributory negligence, and estimate a figure under comparative negligence--without having had experience with the new law. Second the study was part of an intense lobbying effort to keep the state from changing laws, and like the ISO study, it apparently has not been formally published.

Cross-sectional Studies

In a third closed claim study,[24] Hammitt used cross-sectional data from the 1977 AIRAC closed-claims automobile insurance survey to examine the probability of getting paid under the comparative law. He compared the proportion of bodily injury claimants who receive some payment in states with the comparative law with the same proportion in states without the law. Insurance adjustors estimated the relative culpability of plaintiff and defendant. Hammitt concludes that the comparative negligence law increases the number of claimants who obtain some compensation, but not by a large amount. Unfortunately, he had to stop short of a precise estimate because of problems with missing data and likely bias from adjustors in contributory negligence states having to

[23] This study was apparently not publicly published, but results were described in "More Litigation Seen With New Negligence Law," *Insurance Adjustor* (1980).

[24] See Hammitt (1983).

make fault apportionments without actual experience in settling cases in that way. Further, Hammitt had no data with which to estimate the effect of comparative on settlement amounts.

A number of authors[25] refer to studies focusing directly on comparative's effects on insurance rates. Some take the longitudinal approach, focusing on one state, such as Wisconsin, with extensive experience with a comparative law. But Peck conducted the only well documented analysis, in a 1960 cross-sectional study which compared insurance rates in states with and without the new law.[26] Though Peck found data on automobile liability insurance premium rates much more accessible than data on dispute outcomes, he acknowledges the problems of obtaining comparable information across states, and in isolating the comparative effect from the myriad other factors that affect insurance rates. In the end he settled for a more general conclusion than he might have liked, but had an important message. The comparative law had less upward pressure on insurance rates than other commonly occurring changes within states, such as rapidly growing population, increasing urbanization, or the institution of safety oriented traffic programs.

A Multivariate Analysis

In an as yet unpublished study[27] Wittman presents an econometric study of jury behavior in California, concluding that juries partially followed comparative negligence under the contrib law, but went further in that direction once the rule became law.

Wittman models jury verdicts as a two-staged process as is done in this report, and uses data from the same jury verdict reporting service. Further, though he pursued other hypotheses, one could use his results to quantify the effect of the comparative law, as is the aim in this analysis. However, his analysis has less generality, as he confined himself to rear-end auto accidents and to a one year period before and after the California law took effect. Further, he controlled for fewer background factors affecting jury verdicts. Finally, he took less care

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[25] For example see Grubb and Roper (1952), or Pfankuch (1968).
[26] Peck (1960).
[27] Wittman (1984).

than the present author in precisely formulating and justifying his measurement of relative plaintiff negligence, the major methodological contribution of this report. (See Chapter 4.)

III. THE THEORETICAL EFFECTS OF COMPARATIVE NEGLIGENCE

As the purpose of this report is to examine the effects of a comparative negligence law on plaintiffs' expected awards, this chapter develops a construct for the examination of that issue. For a typical mix of jury trials, I examine the amount at stake, showing that the potential redistribution due to the comparative law is considerable. Then I formulate the hypotheses about jury behavior under the old contrib law suggested by the literature and examine the implications each has for the extent theoretical effects are actually realized.

CONSTRUCT FOR THE STUDY OF NEGLIGENCE LAWS

Figure 3.1 considers the extent of defendant negligence in a hypothetical set of cases. I have divided the cases into three categories according to the presence of plaintiff and defendant negligence. In 40 percent of the cases, represented by the block to the far left in Figure 3.1, only the defendant has liability; that is, plaintiff contribution is zero. In 30 percent of the cases, represented by the block to the far right in Figure 3.1, the defendant has no liability, in which case the question of plaintiff contribution is irrelevant. In the middle block, representing the remaining 30 percent of the cases, the defendant and plaintiff share liability in varying proportions. It is to this block of cases that comparative and contributory negligence laws are addressed.

Although I present this graph as hypothetical, it fairly accurately represents real proportions of jury trials in each negligence category. The graph shows 70 percent of the cases with defendant negligence, and 30 percent with both plaintiff and defendant negligence. In my sample of automobile accident cases tried under the comparative law in San Francisco, juries found defendants negligent 75 percent of the time and both plaintiffs and defendants negligent 28 percent of the time. Similarly, in Cook County, during the first one and a half years of comparative law, juries found defendants in auto accident trials negligent 63 percent of the time and both plaintiffs and defendants

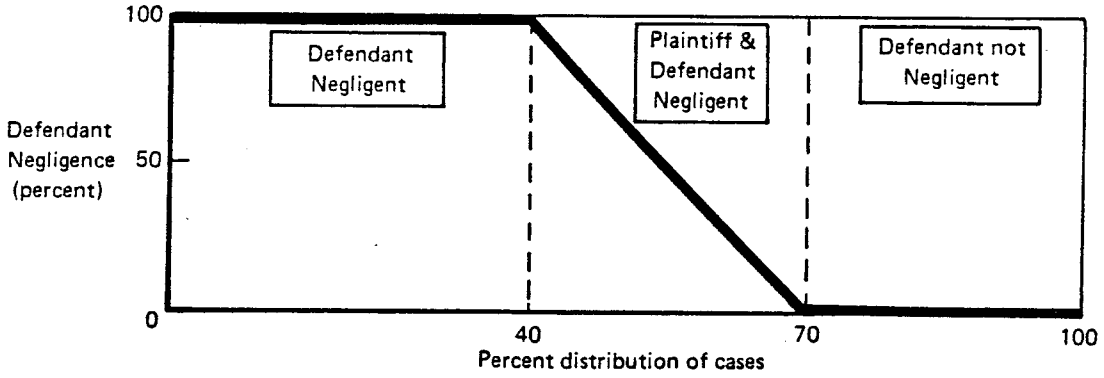

Fig. 3.1 — Typical profile of defendant negligence

negligent 29 percent of the time.[1]

Figure 3.2 examines the same set of hypothetical cases as before, but has damages,[2] rather than percentage negligence plotted on the vertical axis. Showing the theoretical effect of switching to a comparative negligence law, the figure is divided into three panels, showing apportionment of damages under each of the negligence laws and the difference between the two. The crosshatched area represents damages paid for by the defendant and received by the plaintiff via jury award; the white area remaining represents damages covered by the

[1] "Comparative Negligence Case Evaluation Manual and Summary," p. 1.

[2] By damages I mean what a jury would award for compensatory damages; that is, both amounts to cover specific expenses, and amounts (called general damages) to compensate for pain and suffering and other, less tangible, losses.

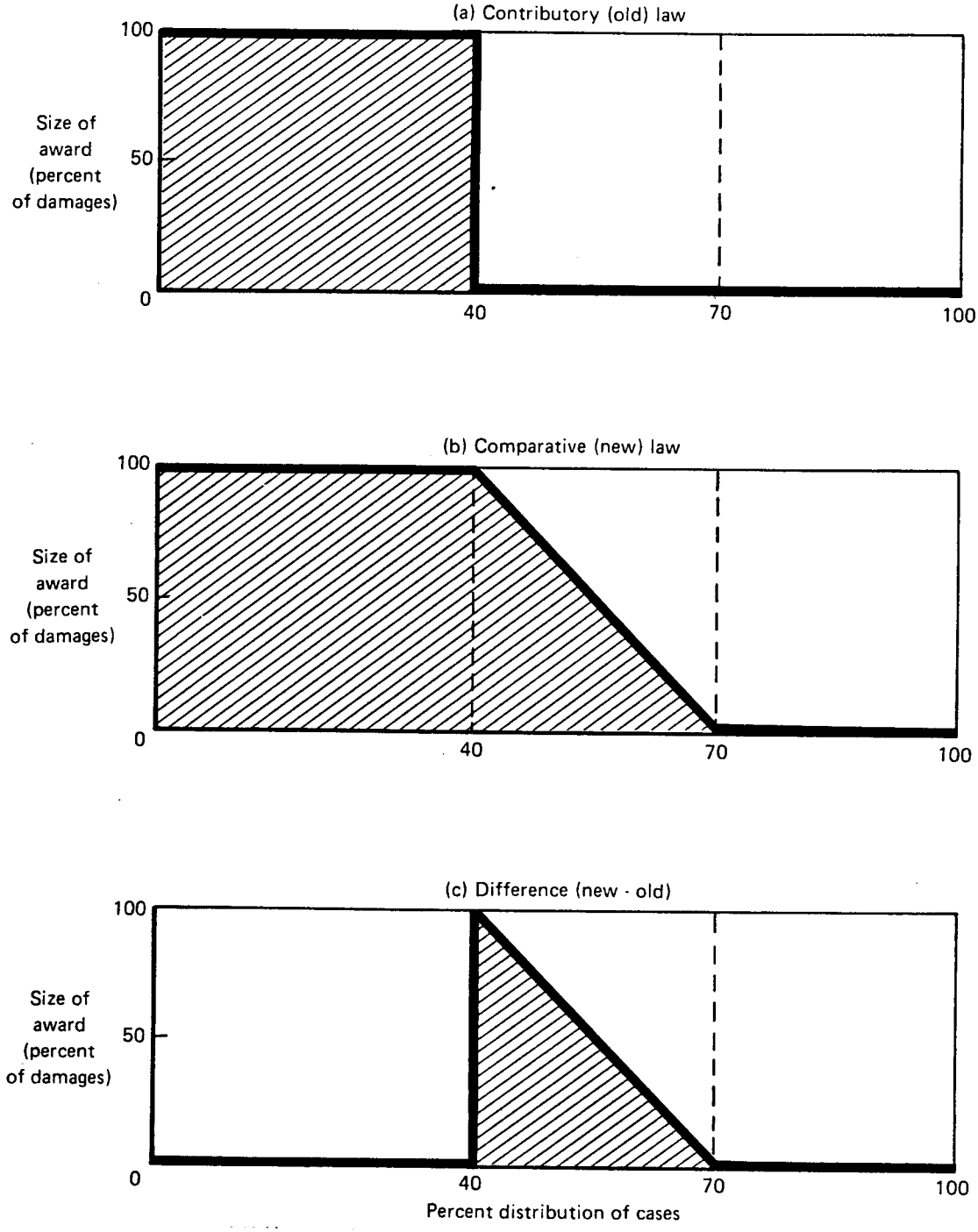

Fig. 3.2 — Theoretical difference in awards under contributory and comparative negligence

plaintiff outside the court system.

Now consider what negligence laws say about how damages should be apportioned to the parties (see Figure 3.2). Note that all the change occurs in the middle block of damages, where the plaintiff and defendant share fault for the accident. Under the old contrib law (see panel a), the plaintiff pays all the disputed costs and the defendant none of those costs--thus the "all or nothing" label. In contrast, under the new comparative law (see panel b), the defendant and plaintiff split the costs in a way exactly corresponding to their relative fault.[3] The difference between the two laws is substantial (see panel c); assuming equal damages for all the parties in the figure, the comparative law increased plaintiff awards by 38 percent.

Besides showing the net effect on total awards, Figure 3.2 clarifies the separate effects comparative has on liability and the average award. Regarding the liability decision, comparative tells jurors that plaintiff negligence is no longer any defense against recovery when the defendant is liable--every plaintiff, unless 100 percent at fault, receives some award. In the figure, the proportion of plaintiff wins increases from .40 to .70, a 75 percent increase.

Comparative retains plaintiff negligence as a defense in the award decision, allowing partial awards to take the plaintiff's carelessness into account. Although more plaintiffs receive compensation, the average award decreases, as partial awards are being added in with full awards. In the figure, the average award goes down over 20 percent, as plaintiffs with awards receive an average of 79 percent of their damages.

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[3] A modified comparative rule (not pictured) would split costs as well, but only up to the point where the plaintiff's negligence exceeds the defendant's; thus that rule has a "half or nothing" aspect to it. The slight-gross form of the comparative law does not have a precise graphical representation, but it would create a cutoff at a point representing considerably less than 50 percent defendant negligence.

THE STAKES IN A CHANGE TO COMPARATIVE NEGLIGENCE

While the potential increase in plaintiffs' awards appears large among these hypothetical cases, it is even larger in San Francisco and Cook County, at least for auto accident trials. Table 3.1 shows the potential effects of comparative in San Francisco and Cook County, Illinois, where we have data on actual jury decisions under a comparative rule. The table compares (the average of) actual jury verdicts under comparative with what would have occurred if juries had applied a strict contributory negligence rule to those same cases; in accordance with the contributory law, all cases with some reductions under comparative would be reduced to zero under contributory.

Table 3.1

MAXIMUM POTENTIAL EFFECTS OF COMPARATIVE NEGLIGENCE ON PLAINTIFF AWARDS[a]

Location and	Average Award[b] ($000)		Increase	
Type of Case	Comparative[c]	Contrib[d]	Amount($000)	Percent
Auto Accident Trials				
San Francisco	40	23	17	74
Cook County, Ill.	49	31	18	58
All Civil Trials				
San Francisco	130	111	19	17
Cook County, Ill.	141	119	22	19

Source: Calculated by author from data in this study, in Shanley and Peterson (1983) and in "Comparative Negligence Case Evaluation Manual and Summary" (1983).

[a] Based on jury verdicts under comparative negligence from June 1981-December 1982 in Cook County and from 1976-1980 in San Francisco.

[b] Average calculated over all plaintiffs who received awards under comparative.

[c] Average of actual jury awards. In San Francisco, the awards are expressed in 1979 dollars. In Cook County, awards are unadjusted.

[d] Calculated by assuming, in accordance with the contributory negligence law, that cases with comparative reductions receive nothing.

Consider the first row of the table, summarizing potential effects on the 317 auto trials occurring in San Francisco between 1976 and 1980. The average award for the 239 plaintiffs who won was $40,000. However, if the 37 percent of those plaintiffs who had their awards reduced under the comparative law had received nothing, the average would be substantially less, $23,000. The difference of $17,000 represents a hefty potential effect of switching to the comparative rule: a 74 percent increase (17/23) in plaintiff awards.

That increase is nearly twice the amount calculated for our hypothetical cases. The reason is that in the hypothetical cases all awards were assumed equal. In San Francisco, however, cases with comparative negligence were worth considerably more; even after the reductions, the average award going to partially negligent plaintiffs was 20 percent higher than the untouched awards going to other winning plaintiffs.

The second row of Table 2.1 shows that switching to comparative involves potentially large stakes in other jurisdictions as well. In Cook County, Illinois, which switched to a (pure) comparative rule in June, 1981, the potential increase in the average award of the first 678 auto accident plaintiffs who won was 58 percent. The potential is considerably lower among all civil cases in both jurisdictions, because other cases do not as frequently involve plaintiff negligence, but a nearly 20 percent increase in plaintiff awards due to one law cannot be considered insignificant by anybody's yardstick.

Calculating an upper bound effect makes clear why many would express alarm at the prospect of changing laws. However, the extent to which the large potential effects are realized depends on how juries actually implement the two laws. I now examine the question of jury behavior.

HYPOTHESES ABOUT JURY BEHAVIOR

The previous section calculated an upper bound effect of switching to a comparative law by assuming juries would follow a contributory law strictly when in effect. One could also calculate a lower bound effect by assuming that juries would completely ignore a contributory law,

awarding full damages whenever defendants were found negligent. In that case, plaintiffs would actually lose (about a 20 percent reduction for auto accident cases) because of the reductions required under a comparative law. Thus, assumptions about jury behavior can powerfully affect estimates of what actually occurred.

The literature is replete with claims that juries did not follow the old contributory law when it was in effect. Indeed, one argument for changing to comparative claimed that continuing to allow juries to ignore the contrib rule only fostered disrespect for law in general.[4] However, lacking data, commentators confined themselves to general remarks concerning the extent or frequency juries followed the rules. This section formalizes the reasonable hypotheses about how juries behave under both laws.

Juries Under the Contributory Law

I cannot find one contention in the literature (at least back to the 1950s) that juries (or insurance adjustors) strictly followed the contributory law. Everyone contends that, in practice, at least slightly negligent plaintiffs receive at least some compensation under a contributory law. However, some authors implied the old contrib law worked as specified when offering the "clean hands" defense of the contrib rule. Contributory negligence doesn't place an extra burden on the injured individual, the argument goes; rather the law treats both negligent plaintiff and negligent defendant (who was likely injured as well) the same--both must pay for their own injuries and neither recovers from insurance.

The most common assertion about jury behavior under contributory negligence was that juries and adjustors partially ignore the contrib law, almost always giving something to minorly negligent plaintiffs and occasionally giving something to plaintiffs more at fault. Figure 3.3 depicts this hypothesis, in a way exactly parallel to how theoretical effects were depicted in Figure 3.2. The curved line in the top panel of Figure 3.3 shows that plaintiffs are not completely cut off under contrib. The result (in the bottom panel) is a smaller increase in plaintiff awards resulting from the change to the new rule. Authors of

[4] Kuhn (1980), for example, made this argument on p. 769.

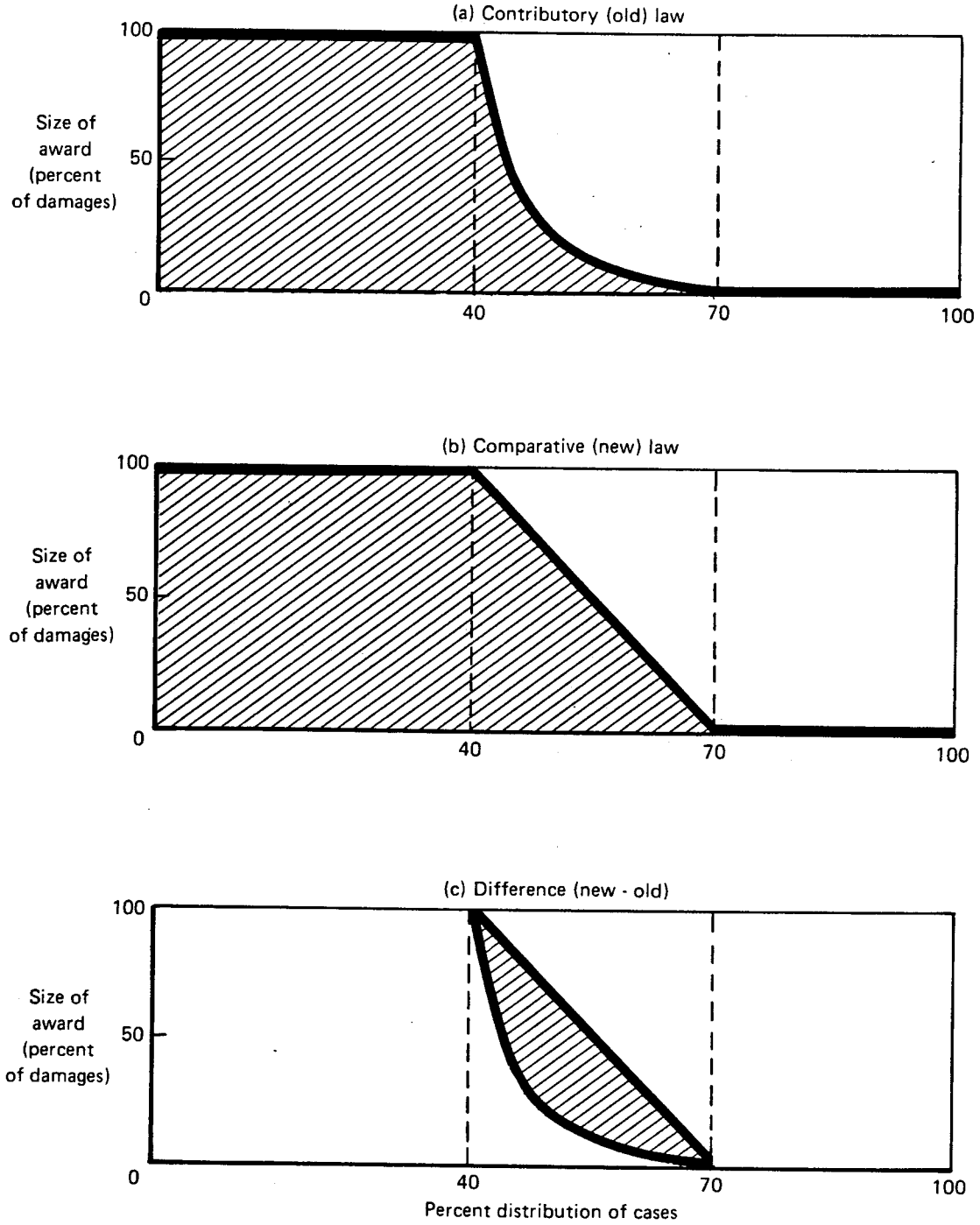

Fig. 3.3 — Difference in awards under hypothesis A: juries partially ignore contributory negligence law

previous empirical research, which suggested only minor effects from the comparative law, might posit this type of graph; but as I discuss below, other hypotheses fit their findings as well.

Others appear to go further, claiming the comparative rule will have no effect at all, because jurors followed the law in a rough way under the old contrib law anyway. This case is represented in Fig. 3.4, and implies that the only effect of the new law is to make jury decisions more consistent.

The contrib law can have a zero effect in more ways than one, however. Some authors have suggested that comparative has at most a small effect because the increase in payments to highly negligent plaintiffs are financed by a decrease in payments to slightly negligent plaintiffs; "cases where a plaintiff would have gone empty-handed under the old regime are probably matched by those where compassion need now no longer be exercised by excusing the plaintiff completely."[5] Figure 3.5 shows this situation, a zero effect overall, but a transfer among plaintiffs from slightly negligent to highly negligent ones.

If this hypothesis prevails, it may have important implications for the 28 states with a modified comparative rule. Those states prevent plaintiffs more than 50 percent negligent from collecting, and so might be left with a supposedly pro-plaintiff law that actually decreases what plaintiffs receive.

Juries Under the Comparative Law

Figures 3.2 - 3.5 all assume that juries follow the comparative law when in effect (the middle panel is identical in each case). However, what if juries don't strictly follow the new law in practice? Some defense attorneys have occasionally claimed as much, contending that "quite frequently juries in Mississippi disregard the plaintiff's negligence and base their verdict on the (total) amount of plaintiff's damages."[6] The results of this analysis suggest a different conclusion: that juries deduct for plaintiff negligence twice--once by tending to

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[5] Fleming (1976), p. 244; see also Pfankuch (1968), p. 731.
[6] Ghiardi (1969), p. 64.

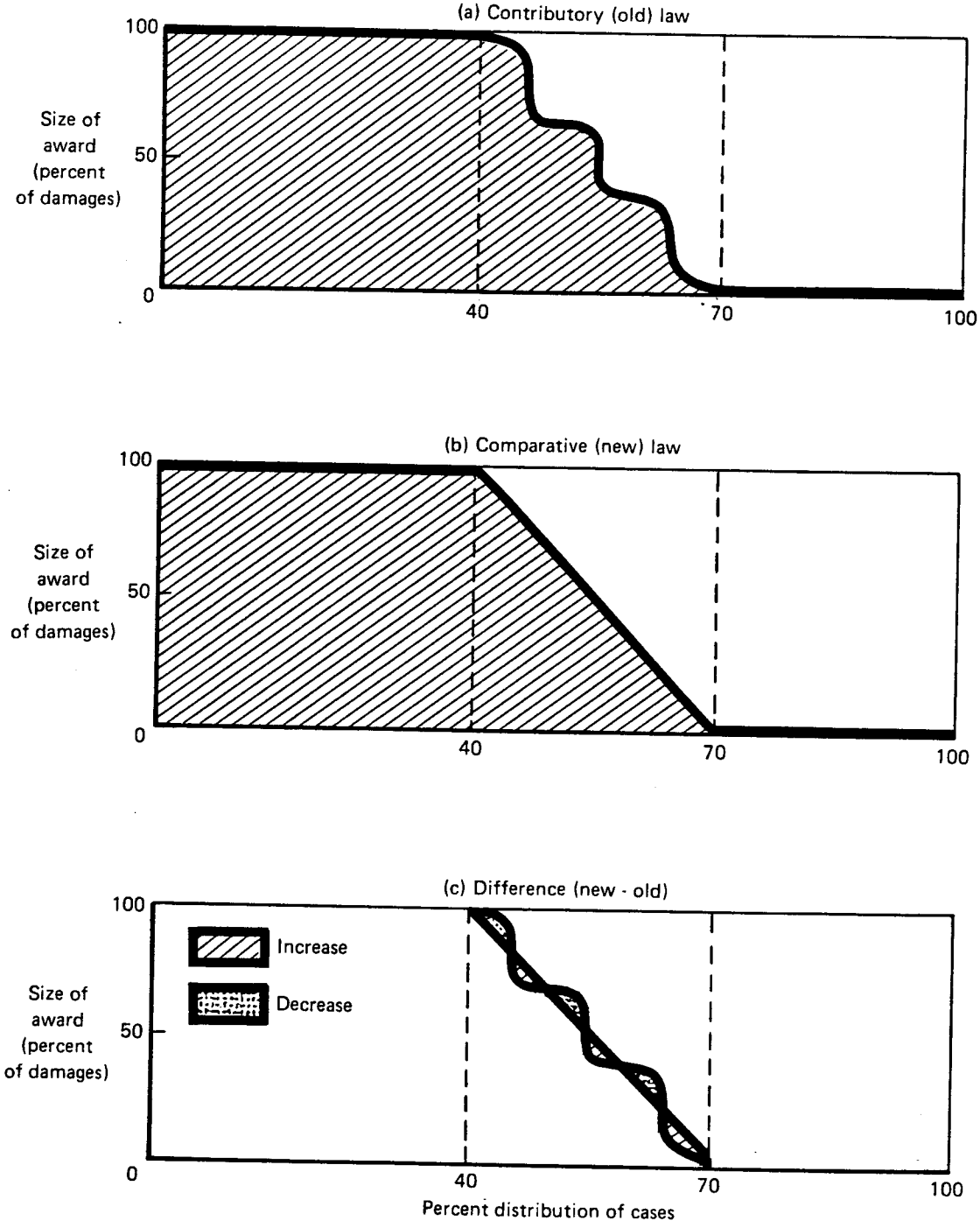

Fig. 3.4 — Difference in awards under hypothesis B: juries follow approximate comparative rule under contributory negligence law

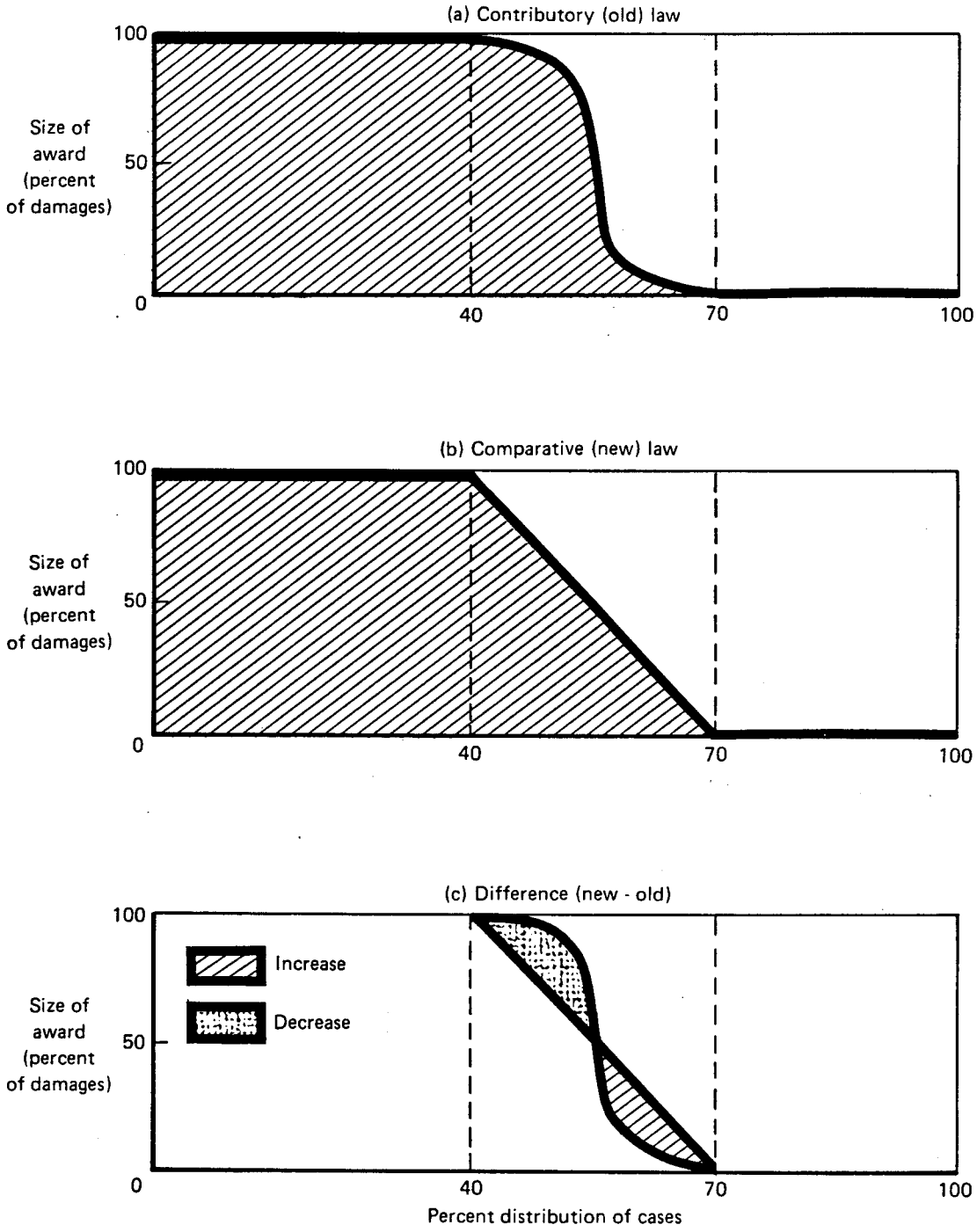

Fig. 3.5 — Difference in awards under hypothesis C: juries usually ignore contributory negligence law when plaintiff less negligent than defendant

give a net award when courts ask for a gross one, and once by specifying a percentage reduction for the court to apply in addition.

What Next

To determine exactly how juries behaved, and how that behavior translates into a change in plaintiff awards, one must examine actual jury verdicts under both laws, and control for the ways the cases differ. Controlling for relative plaintiff negligence is especially important, given the likely selection effect from the comparative law, which, if it occurred, changed the mix of cases that reached trial in the comparative era. I now turn to the modeling of jury verdicts and behavior.

IV. DESIGN AND METHODOLOGY

This research focuses on the effect of a comparative negligence law on what juries award plaintiffs in auto accident trials. Ideally, I would have preferred a controlled experimental design, in which a given set of cases were either (1) tried before juries twice, once under a comparative law, and once under a contributory law, or (2) tried before juries once, but randomly assigned to comparative and contributive contexts. Most social science research, however, must settle for less than a randomized design, and this effort is no exception. I capitalized on the state of California's switch to comparative negligence in April of 1975 to conduct a quasi experiment in San Francisco courts.

Using data about trials from a jury verdict reporting service, I compared jury verdicts in auto accidents in the 1970-1974 (contributory negligence) period with those in the 1975-1980 (comparative negligence) period. A multivariate design controls for differences among cases both within and between periods. The two stages of the analysis follow the sequential decisions of jurors--first they decide whether the plaintiff wins, then, if a win, the amount of the award. Logit regression predicts the probability of a plaintiff win, and least squares regression, the amount of the award given a win. The product of these two predictions yields the expected award--the average amount a plaintiff can expect to receive from bringing a case to trial.

This chapter presents details of the design and the full methodology used in the report. First, it reviews the reasons for choosing auto accidents as the context for this study, then discusses the source and nature of the data. After that, it explains the derivation of variables that measure relative party negligence. Those variables lie at the heart of the analysis and represent the major methodological contribution of this work. Finally, the section describes the two-staged model of jury verdicts which employs the negligence variables.

WHY AUTO ACCIDENT TRIALS?

The extreme variation in the liability issues in different areas of law necessitated a focus on a single legal area. Auto litigation was selected for three reasons. First, auto accidents dominate civil litigation. Table 4.1 shows that auto accidents are the subject of about half of all jury trials in San Francisco County and a greater proportion in Cook County. Further, auto accidents make up an even greater proportion of settlements, as a smaller than average proportion of those types of cases reach trial.

Table 4.1

TYPES OF CIVIL JURY TRIALS IN
SAN FRANCISCO AND COOK COUNTIES
1960-1979

	Percent of All Trials in	
Type of Case	San Francisco County[a]	Cook County[b]
Automobile accident	48	61
Worker injury	15	7
Injury on property	13	10
Common carrier	8	6
Product liability	7	5
Professional malpractice	7	3
Contracts/business	6	2
Intentional tort	6	4
Other	8	8
Total[c]	117	106
Total Cases	5,300	13,300

Source: Jury verdict file, Institute of Civil Justice.

[a] Includes trials in Superior and U.S. Federal Courts.

[b] Includes trials in the Law Division, Cook County Circuit Court, and U.S. Federal Court.

[c] Totals exceed 100 percent because trials sometimes involve more than one type of claim. Totals do not sum because of rounding.

Second, auto litigation offered a relatively stable area of law, in which the effects of comparative would not have to be disentangled from other changes in rules. Third, auto accidents are one of the six types of civil trials where juries frequently find comparative negligence; (see Table 4.2) and while auto accidents are not the most frequent forum for comparative issues, their domination of civil court dockets made them the only case type with a sufficient sample size to undertake a study.

Table 4.2

TYPES OF CIVIL TRIALS WHERE
COMPARATIVE NEGLIGENCE FOUND FREQUENTLY:
SAN FRANCISCO AND COOK COUNTIES

	Percentage of Plaintiff Wins with Reduction	
Type of Case	San Francisco County[a]	Cook County[b]
Injury on property	49	66
Street hazard	45	64
Worker injury	44	39
Product liability	41	30
Automobile accident	35	46
Common carrier	34	47
All other	11	13
All case types	31	46

Source: Jury Verdict file, Institute of Civil Justice and "Comparative Negligence Case Evaluation Manual and Summary" (1983).

[a] Based on 1976-1980 trials.

[b] Based on the first 1076 plaintiff wins after comparative negligence became law in Illinois in June, 1981.

THE DATA

Some data for this study was collected by the author, and the remainder was drawn from a large data base constructed by the Institute for Civil Justice. The Institute collected the data from publications of a long-established and independent jury verdict reporting service in California. The service's weekly newsletter[1] is sold primarily to plaintiff and defense lawyers and insurance companies. For over 25 years, it has supplied a one to two page description of lawsuits that come to trial, giving outcomes, characteristics of the parties, case circumstances, special damages claimed, and a short description of liability contentions of both plaintiff and defendant. Trial lawyers themselves supply the detailed data on case circumstances and outcomes, responding to a questionnaire sent by the service.

The service seeks information on every trial, not just those chosen by lawyers, and has proved quite successful in obtaining responses. An independent audit conducted by this author has estimated the service reports at least 85 percent of all jury trials.[2]

The Institute for Civil Justice designed a survey form, from which a wide variety of information about trials could be collected and computerized. It now has a file on over 5000 jury trials completed in the federal and state courts of San Francisco County between 1960 and 1980.

Using another long-established jury verdict reporting service in Illinois, the Institute collected similar information on over 9,000 trials in Cook County between 1960 and 1979. Together, the two efforts represent the largest systematic survey of civil juries ever conducted, and the first to provide comprehensive information about lawsuits tried to juries.

Despite the large volume of information on hand, studying the comparative issue required more. Designing information needs to measure defendant and plaintiff liability in cases, I reread the descriptions of the 675 auto accident trials in the sample, and coded the new

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[1] *Jury Verdicts Weekly*, published out of Santa Rosa.

[2] See Shanley and Peterson (1983), Appendix A.

information myself. Details of this effort are presented later in this chapter.

THE SAMPLE COMPOSITION

The trials of 675 auto accident plaintiffs[3] became the data set for this study in the following way: All auto accident trials in the five year period after the April 1, 1975 change in the law were included, excepting only those in which juries did not make both the liability and award decisions (either judges directed a verdict, or defendants admitted guilt or defaulted). Next, trials before April 1, 1975, were sampled, as they were more numerous and resources for the study were limited. The sample includes 30 percent of 1970 auto trials, 65 percent of 1971 trials, and 100 percent of 1972-1974 trials. All comparative era years are collected at 100 percent.

The sampling procedure yielded a potential of 726 cases for analysis, of which 51 were excluded for other reasons. Nineteen (19) accidents involving trains were dropped because operators are governed by different laws than auto owners. Fifteen (15) more cases were set aside because the trial did not involve the negligence of the defendant driver; rather, the proceedings centered around another area of law, such as product liability (eg. allegedly defective brakes) or street hazards (eg. allegedly improperly maintained streets). Finally, 17 trials could not be coded, either because the original description could not be located, or the liability information provided by the reporter was insufficient.

A BRIEF DESCRIPTION OF AUTO ACCIDENTS

Plaintiffs in auto accident litigation are usually drivers of another auto, but not always. Fifty-six (56) percent of the plaintiffs in the sample were drivers. The rest were about equally divided between riders in autos (23 percent) and pedestrians (21 percent).

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[3] I refer to each plaintiff as a separate trial. However, because some plaintiffs are tried together, the number of trials, as the courts would define them, was less--581.

Defendants in this report are grouped according to the plaintiffs that have sued them, as the plaintiff is the unit of analysis. Every trial had the negligence of a defendant driver as an issue in the case. However, that issue could involve not only the driver to trial but also the driver's employer. Under the rule of respondent superior, employers are held liable for the negligence of their employees. In addition, a few cases involved other legal issues, which brought in other non-individual defendants. Those other defendants included property owners of the accident site, governmental bodies responsible for street maintenance and safety, and manufacturers of auto products. In all, 38 percent of the plaintiffs named defendants who were not individuals in their lawsuit.

Auto accidents occurred in a wide variety of situations. (See Table 4.3.) As one might expect, most occurred at street intersections, but liability issues differed depending upon the context. Rear end accidents were the most dominant type of auto trials, accounting for 30 percent in the sample, more than twice the percentage of any other category.

Who causes the auto accidents? Juries provide their view via special verdicts. Of the 239 plaintiffs in the sample who won in the comparative period, 88, or 37 percent contributed to their own injuries, and had their verdict reduced. That percentage varies by type of plaintiff. Drivers had their awards reduced 44 percent of the time, due to unlawful speed, negligent lookout, management, or control, illegal maneuvers and the like. Pedestrians contributed to their own injuries almost as often, (42 percent) by crossing streets illegally (i.e., by jaywalking, walking outside the crosswalk, or against the light) or by crossing legally, but without ordinary care (i.e., by darting out or not paying attention to traffic). Riders, on the other hand, were nearly always free from guilt; in only 11 percent of the cases, their awards were reduced for failing to take reasonable precautions for their own safety. Those infractions included such minor items as failing to wear a seatbelt, or the greater carelessness of knowingly riding with an intoxicated driver.

Table 4.3

TYPES OF AUTO ACCIDENTS

Type	Frequency	
	Number	Percent
Rear End	205	30
Intersections.		
Traffic Light	101	15
Uncontrolled	83	12
Stop Sign	54	8
Turns		
Left Across, Oncoming	41	6
Other Turns	35	5
Failure to Yield	19	3
Backing	19	3
Head-on	16	2
Other	102	15
Total	675	100

The 88 plaintiffs found partially at fault had awards reduced an average of 37 percent. The majority had less than 37 percent reductions, but a third had more than 50 percent. (See Figure 4.1) At least theoretically (depending on jury behavior), these plaintiffs would be barred from recovery in the 27 states with "modified" comparative laws.

MEASURING PARTY NEGLIGENCE

Providing a basis for comparing trials in the pre- and post-comparative era requires measurement of the degree of plaintiff and defendant negligence; only then can differences in jury decisions reasonably be attributed to the comparative law. Of course, the relative fault of the parties cannot be gauged precisely from the short descriptions of the liability issues provided in a jury verdict

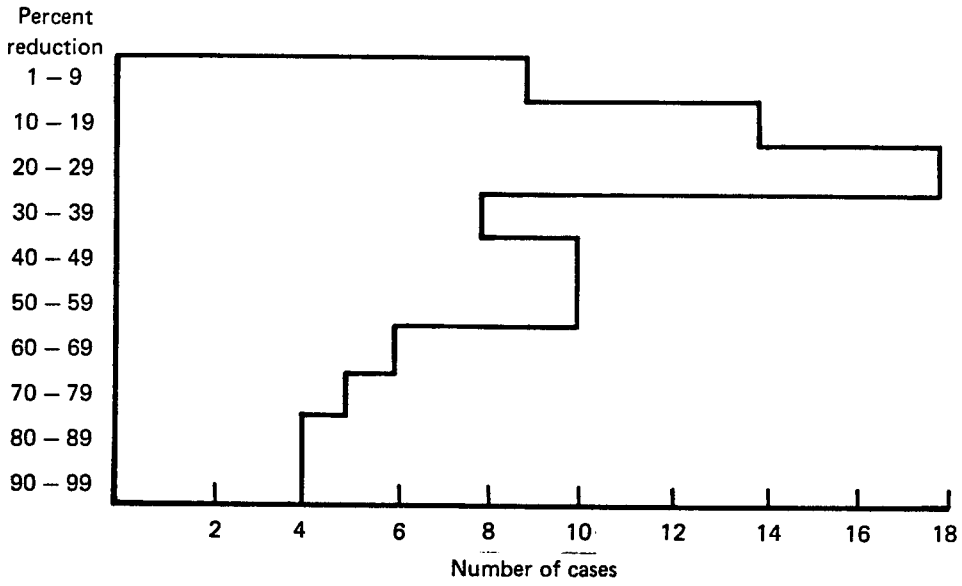

Fig. 4.1 – Reductions in awards cited in special verdicts

reporter; the factors juries take into account are too numerous, difficult, and uncertain to measure. Fortunately, the purposes of this study do not require that kind of precision. The objective is not to replicate jury decisions in specific cases, but to distinguish slightly negligent plaintiffs and defendants from moderately or highly negligent ones. Note that the hypotheses posed earlier concern distinctions only about these broad groups of plaintiffs.

In this section I derive the surrogate variables for negligence used in this study. Traffic law, familiar to most drivers, provided the starting point. From there I used concepts of negligence described in basic law textbooks,[4] and texts about comparative negligence[5] to evaluate the descriptions of liability issues in the jury verdict reporter. Cases not in the sample were used for this practice. Negligence categories were further developed and validated by data from the annual summaries of trials published by the Cook County Jury Verdict Reporter.[6] Those publications partially differentiated jury verdicts by some of the liability characteristics used in this study.

Defenses

The idea of plaintiff negligence requires a context. It is the major defense used by defendants in auto accident trials.[7] Defendants used it against 63 percent of the plaintiffs in our sample. The proportion of two-thirds appears to have some generalizability, as 67 percent of a sample of Cook County trials had that defense raised as well.[8]

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[4] See for example, Prosser, "Degrees of Negligence," Handbook of Law of Torts, Chap. 5, Sec. 34 (1971), p. 180ff.

[5] Heft and Heft, *Comparative Negligence Manual*, Chap. 4 generally, and especially "Suggested Comparisons of Negligence Between Drivers" (1978), plus 1983 Cumulative Supplement.

[6] See the annual publication, "Summary and Category Index," throughout the 1960s and 1970s.

[7] Excluding the defense of simply denying the plaintiff's claim(s), which occurred in all but 16 percent of the trials.

[8] "Comparative Negligence Case Evaluation Manual and Summary" (1983).

What other defenses do defendants have? Besides blaming the plaintiff, the defendant sometimes accuses another party to the accident; for example, a defendant driver accused of injuring a rider in another car might accuse the passenger's driver, who was not named as a defendant; a driver accused of hitting a small child might accuse the parents or guardians, or a defendant might accuse the driver of a third vehicle, perhaps one who has already settled with the plaintiff. A third type of defense essentially claims that no identifiable person was at fault--because unpredictable road conditions, or a brake failure, or a phantom driver caused the accident. Finally, a defendant might choose to concede on the liability issue, and concentrate his defense on limiting the amount of the award. The figures below show the frequency of each defense type. Note that plaintiff negligence should be the strongest defense under a contributory negligence rule, but akin to "no defense" under the comparative negligence rule.

Degrees of Negligence

A Specific Case. To consider varying degrees of plaintiff negligence, consider the liability information available in the jury verdict reporter for a typical case. (See Figure 4.2.) The figure describes a left turn collision in which the plaintiff contends the defendant turned directly in his path. The defendant, on the other hand, claims he made a turn that appeared safe, but which resulted in an

Table 4.4

TYPES OF DEFENSE IN AUTO ACCIDENT TRIALS

Defense Claim	Percent of Trials
Plaintiff Negligent	63
Other Person Negligent	12
Nobody Negligent	9
No Liability Defense	16
Total	100

accident due to the speed and inattention of the plaintiff.

Thus we have three types of negligence claimed--a dangerous left turn, speeding, and inattention. How might we differentiate? First, notice that in a left turn situation, the oncoming driver has the right of way, suggesting the defendant's negligence is greater and placing upon the turning driver the burden of showing that the turn would have been safe but for the plaintiff's carelessness. True, the defendant claims his turn was safe, except for plaintiff negligence; but the fact that he was turning, and not the plaintiff, made his responsibility in the situation greater. Also, consider the degree of proof about the claims--the left turn is a relatively easy fact to prove at the trial, while the speeding and inattention are claims subject to the arguments and evidence presented.

On the other hand, the claim of inattention is minor. It suggests a passive carelessness in a low risk situation for the plaintiff, as opposed to the active carelessness involved in speeding or turning. To see that the inattention is minor, suppose the defendant had accused the plaintiff only of inattention, not speeding. Then the defendant would be in the position of saying that, "yes, I made an illegal turn, but the plaintiff should have paid more attention and avoided me." Except for extreme cases of inattention, most juries would presumably consider the defendant more at fault.

Positional Negligence.

The negligence of the turning defendant I call "positional negligence" as the position of the vehicles at accident suggests a greater negligence. Positional negligence applies in many more situations than the left-turn case: whenever the position of the vehicles implies that one driver has the right of way over another. In 432 of the 675 accidents in the sample, or 64 percent of the total, one party had the disadvantage of positional negligence. It occurs most often in the most numerous case type, rear end cases, in which the driver in back has the greater responsibility to avoid a collision. A driver pulling out from an arterial stop sign, or arriving second at an uncontrolled intersection, or having the red light against him has a

LEFT TURN COLLISION--AUTO-STREET CAR

Plaintiffs: Grover and Albenia were injured when the auto driven by Albenia and in which Grover was a passenger, collided with defendant's street car on San Jose Avenue.

Plaintiffs contended that they were proceeding in a proper manner on San Jose Avenue when the defendant street car operator made a left turn directly in their path to enter a Municipal Railway Car Barn.

Defendant contended that the operator made the left turn when it was apparently safe to do so, but due to the speed and inattention of the plaintiff the accident occurred.

Figure 4.2
Typical Description of Liability Information,
Jury Verdicts Weekly

similar greater responsibility. Table 4.5 lists the percentage distribution of positional negligence cases by type of case. Notice that plaintiffs rarely bring a case to trial where they are positionally negligent--a testament in itself to the greater seriousness of that type of negligence.

Minor Negligence

Minor negligence I define broadly as the use of ordinary, but not great, care. In practice, it translates into claims of (other than gross) inattention or failure to take defensive action, as the only claim against a party. It occurred in 120 of the 675 cases in the sample, or 18 percent of the time. Two thirds of those cases involve claims against pedestrians or the front drivers in rear-end accidents. In the latter, the front driver is accused of an abrupt stop necessitated by his inattention; in the former, the pedestrian is accused of inattention to the vehicle which violated his right of way.

Plaintiffs rarely bring defendants to trial based on a claim of minor negligence only. In all but 7 of the 120 cases, defendants, hoping for a "not guilty" verdict in the contributory negligence era or

Table 4.5

PERCENTAGE DISTRIBUTION OF TRIALS WITH POSITIONAL NEGLIGENCE BY PARTY AND CASE TYPE

Case Type	Defendants	Plaintiffs	Total
Rear end	47	22	44
Stop sign	9	22	11
Traffic light	8	5	7
Uncontrolled	6	5	6
Left turn	6	27	8
Other turn	5	2	5
All other	19	17	19
Total	100	100	100
Number of cases	391	41	432

a reduction in the award in the comparative negligence period, claimed plaintiffs were guilty of only minor infractions. As with positional negligence, the frequency of minor negligence among parties suggests the validity of the categorization.

Other Distinctions

The remaining 223 cases, in which neither positional nor minor negligence applied, were treated as involving simple negligence. Other liability distinctions were sought, but did not materialize.[9] For example, some parties might be termed "grossly negligent" when accused of driving recklessly or when drunk. However, I found too few cases to form another category, and little apparent reasonableness to many of the claims of extreme carelessness. In the end, the distinction was ignored.

In a few other cases, parties openly admitted partial responsibility. A plaintiff might make such an admission in the comparative period, claiming that defendant negligence still entitles him to some award; or a defendant might take this route in the contributory era, counting on a strict treatment of plaintiff negligence to excuse his error. In practice, the 17 cases of admitted negligence were grouped with positionally negligent cases, on the grounds that both types had a strong basis in fact.

Finally, we sought to code the advantage a party receives when having an edge on the evidence, via an eye witness, police, or expert testimony that favored him. However, such evidence was too seldom reported to use.

Forming Negligence Scales

Based on the distinctions of positional and minor negligence, I define four categories of increasing negligence as follows:

No negligence	When plaintiffs are not accused of contributing to their accident
Minor negligence	Inattention, primarily of plaintiffs

[9] The survey form is displayed in Appendix A.

Ordinary negligence	Some negligence, but neither minor nor positional negligence (a default category)
High negligence	Positional negligence, as described above

Applying these scales to the 675 plaintiffs and defendant groups in our sample yields two categories of defendant negligence and four categories of plaintiff negligence. (Table 4.6)

Analyzing the interaction of type of negligence between parties leads to a one dimensional scale of combined party negligence. Four groups emerge, each with an increasing plaintiff share in the total fault. (See Table 4.7.) In the lowest category, where plaintiff negligence is much less than the defendant's, the defendant accuses the plaintiff of inattention (i.e., minor negligence), almost always in the face of his positional negligence. It is comprised of all the 120 cases of claimed minor plaintiff negligence, and occurs in 28 percent of all cases of claimed plaintiff negligence. One might think of this as the rear-end case where the defendant in the rear car accuses the plaintiff of precipitating the accident by an abrupt stop necessitated by his

Table 4.6

PERCENTAGE DISTRIBUTION OF PLAINTIFFS AND DEFENDANTS BY DEGREE OF NEGLIGENCE

Negligence Category	Plaintiffs	Defendant Groups [a]
No negligence	37	--
Minor negligence	18	1
Ordinary negligence	38	39
High negligence	7	60
Total	100	100
Number of cases	675	675

[a] All defendants are considered as a group in the analysis.

Table 4.7

NEGLIGENCE CATEGORIES: A SCALE OF
INCREASING DEGREE OF PLAINTIFF NEGLIGENCE

Category			Frequency Among Trials	
Number	Description	Example	Number	Percent
1	P MUCH LESS THAN D	D REAR END Claims P sudden stop	120	28
2	P LESS THAN D	D REAR END Claims P cut him off	99	23
3	P & D ABOUT EQUAL	TRAFFIC LIGHT Who ran the red	159	38
4	P GREATER THAN D	P REAR END	44	10
		Total	422	100

Note: P = plaintiff and D = defendant.

carelessness. In the next category, the defendant's positional negligence still gives him the greater blame, but the plaintiff is now accused of something more serious (i.e., ordinary negligence), say of illegally changing lanes and stopping abruptly in front of the defendant. This also happens about a quarter of the time. Skipping one, and moving to the last category, where the plaintiff's positional negligence is greater than the defendant's (ordinary negligence), we have, as an example, the same rear-end accident with illegal lane change; but in this case the plaintiff is the one in back. This type of dispute doesn't reach trial often; it represents only 10 percent of the situations.

The third category, which I have called "P and D about equal," is actually a default category; from the description in the jury verdict reporter, no negligence distinctions can be made. An example doesn't occur in the context of rear-end accidents; however, juries commonly hear the arguments in traffic light cases, in which each party claims

the other ran a red light. This category becomes somewhat troublesome in analysis, likely due to the lack of usable information in the case description. Information about eye witnesses and expert testimony would be very helpful here to make a sharper distinction.

Validation of the Negligence Scale

Because the negligence scale described above was arrived at independently of sample data, that data can provide a test of the validity of the grouping. Results confirm that the categories work as intended. First, consider jury liability decisions in the categories under both negligence rules (Table 4.8). Under the contrib law, the percentage of plaintiff wins decreases sharply with increasing plaintiff negligence, just as theory says they should.[10] Under the comparative law, those percentages substantially increase, and, with the exception

Table 4.8

LIABILITY IN NEGLIGENCE CATEGORIES
BY TYPE OF LAW

	Percent P Victory	
Relative P Negligence	Contrib	Comparative
P much less than D	75	88
P less than D	53	86
P & D about equal	47	58
P more than D	36	69
All Cases	54	75

Source: Based on the 422 cases in the sample where plaintiff negligence was claimed.

[10] Notice that the fact that some plaintiffs in high negligence categories won in the contrib period does not necessarily mean juries ignored the law. Why? The categories are based on "claims" of negligence; and in some cases the jury will decide that, in fact, no plaintiff negligence occurred.

of the third category, the increase is higher in the higher categories. Some difference in percentage liability still exists between categories, but it appears most can be explained by the variation of defendant negligence; in the first two categories the defendant is positionally negligent, in the last two, he is not. In sum, it appears the categories work as designed.

A second, and perhaps better, test of category validity lies in the special verdicts rendered by juries in the late 1970s. Table 4.9 shows the distribution of juries' decisions about comparative--whether the plaintiff shares the fault, and, if so, how much the deduction should be. The first column of Table 4.9 shows that juries were convinced a little more than half the time that defendant claims of plaintiff negligence were true, suggesting that making a more serious claim doesn't increase chances of a reduction. However, when plaintiffs are positionally negligent ("P more than D" in table), juries appear to

Table 4.9

SPECIAL VERDICTS BY NEGLIGENCE CATEGORY

	Jury Decisions	
Relative P Negligence	% Comparative[a]	% Reduction[b]
P much less than D	54	24
P less than D	53	30
P & D about equal	58	51
P more than D	82	53
All cases	57	37

[a] Based on 239 guilty verdicts in the comparative era.

[b] Based on 88 reductions of plaintiff awards.

nearly always make a reduction.

The second column of Table 4.9 shows juries' decisions on the percentage reductions in the categories. The average reduction does increase with increasing plaintiff contribution, as it should, and those percentages appear to fairly closely match the labels given to the categories.

MODELING JURY BEHAVIOR

Having built the negligence scales, I now apply them to an overall model of jury behavior. The model estimates a plaintiff's expected award from taking a case to trial as a product of (a) the probability of the plaintiff winning the case and (b) the expected value of the jury award, given a plaintiff win. The probability of a plaintiff win and the conditional award are assumed independent.

A two-staged approach is adopted because a one-stage approach is both statistically and theoretically inappropriate. One could model jury awards directly, using an award value of zero whenever a defendant verdict occurs. However, statistically, having so much of the dependent variable (40 percent) concentrated at a lower limit, leads to biased estimates in ordinary least squares regression. Theoretically, one equation doesn't allow the investigation of the two opposing effects of comparative--the increase in plaintiff wins, and the decrease in their awards.

The Model

Formally, the complete model can be summarized by the equations below: The probability of a plaintiff win is estimated by a logit function,

$$\Pr(\text{P win}) = 1/(1 + e^{-A'X}) \quad , \qquad (1)$$

where Pr = probability function

P = plaintiff

e = the base of the natural logarithm (2.718)

A = vector of logit coefficients

X = vector of plaintiff and defendant liability variables

The expected value of a positive plaintiff award is estimated in the log transformation using ordinary least squares,

$$E(\text{Award}|\text{P win}) = e^{B'Y + \sigma^2/2}, \qquad (2)$$

where E = expected value function

B = vector of regression coefficients

Y = vector of liability, party, and case characteristics

σ^2 = the variance of residuals. The $\sigma^2/2$ term adjusts for the convexity caused by the log transformation of the dependent variable.

Thus, the plaintiff's expected award is the product of (1) and (2), or

$$E(\text{Award}) = \frac{e^{B'Y + \sigma^2/2}}{1 + e^{-A'X}} \qquad (3)$$

The Variables

Negligence variables in this model were constructed for this report, as described above. The others were derived in studies completed in the ongoing Jury Studies Program at the Institute for Civil Justice.[11] Appendix C provides a short descriptive analysis of sample trials using the models' independent variables, as described below.

The probability of a plaintiff win is modeled as a function of the defense used, the degree of P and D negligence, and an indicator for background effects in the comparative era. (See Figure 4.3.) With those controls, the marginal effect comparative had on jury behavior was measured by an interactive variable of negligence in the comparative period.

The basic hypotheses are that the probability of a win increases with higher defendant negligence and decreases with higher plaintiff negligence. Further, if juries followed the law, plaintiff negligence should show up as a strong defense in the contrib era and no defense at all in the comparative era. Finally, we expect no unmeasured background

[11] Chin and Peterson (forthcoming), Shanley and Peterson (1983), Peterson (1984).

VARIABLES	VALUES
Dependent Variable	
Plaintiff win	0,1 indicator
Independent Variables	
Defendant negligence	Ordinary or high
Defense of defendant	
Other person negligent	None, minor, ordinary or high
No person negligent	0,1 indicator
No defense	0,1 indicator
Plaintiff negligent	None, minor, ordinary or high
Plaintiff neg.--1975-80	Same as above, in comparative period
Comparative era	0,1 indicator

Figure 4.3
Variables in Logit Analysis of Liability

effects.

More variables affect jurors' decisions about awards. The regression portion of the model predicts the size of a positive plaintiff award as a function of the amount of damages sustained by plaintiffs, characteristics of the parties and the case, a control for background effects in the comparative era, the type of defense, and the relative degree of plaintiff negligence. (See Figure 4.4.) As with the logit equation, the comparative effect is measured by an interactive variable of plaintiff negligence in the comparative period.

Jury awards increase with greater plaintiff damages. Further, previous research has shown that juries award more money when defendants are businesses or governments (they are sometimes described as "deep pocket" defendants because juries apparently view them as better able than individuals to pay larger awards), when the plaintiff is male (this result may be a function of the typically lower wage of employed women when compared with men), when a larger number of defendants are named in the suit, and when plaintiffs are not grouped together in single trials.[12] According to theory, the award will decrease (if anything) with increasing plaintiff negligence, but whatever the effect, it will be lower in the comparative period when the plaintiff is negligent. Again, we expect no unmeasured background effects.

SELECTION EFFECTS

In a quasi-experimental design, in which random assignment of cases to the before and after period cannot occur, selection effects can threaten the validity of research results. A pervasive problem in quasi-experimental research, selection effects occur when changes in the variable of interest (in this case, the plaintiffs' expected award) result not only because of changes in the policy variable (in this case, the type of negligence law), but also because of other differences between experimental groups (in this case, trials under contributory negligence and those under comparative negligence). Since the comparative law changes the expected payoffs of both plaintiffs and defendants considering trial, it almost certainly changes the mix of

[12] See Chin and Peterson (forthcoming).

VARIABLES	VALUES
Dependent Variable	
Log of Award	Positive amounts
Independent Variables	
Background Variables	
Damages incurred	
Log of estimated medical expenses	Positive amount
Log of estimated lost wages	Positive or zero
Party characteristics	
Business or government defendant	0,1 indicator
Female plaintiff	0,1 indicator
Number of plaintiffs in case	Number
Number of defendants in case	Number
Liability Variables	
Type of other defenses	Other person or no person at fault, or no defense
Relative plaintiff negligence	Much less than, less than, about equal to, or greater than defendant negligence
Relative plaintiff neg.--1975-80	Same as above, in comparative period
Comparative era	0,1 indicator

Figure 4.4
Variables in Regression Analysis of Award, Given Liability

cases that reach trial.

Statistical controls help neutralize selection effects. That, in fact, is a major function of the negligence categories created for this research. If, on the one hand, comparative brings to the courtroom more highly negligent plaintiffs (e.g., plaintiffs who have rear-ended the driver they are suing), hoping to recover some percentage of their damages, the analysis presented here controls for that effect. If, on the other hand, it brings more slightly negligent plaintiffs (e.g., inattentive pedestrians) to trial, battling with defendants over the size of their deduction, and no longer threatened by the prospect of a zero award, the analysis also accounts for the change in estimating changes in the expected award.

However, if changes in the mix of plaintiffs among negligence categories are controlled for, changes within negligence categories are not. Selection effects can still occur if apparent changes among categories are explainable by (unmeasured) changes within categories. Consider the minorly negligent, inattentive pedestrian again, the first category in the scale. If plaintiffs of that type, encouraged by the new law, bring weaker cases to trial in the comparative era, for example, ones without eye witnesses or in which the plaintiff's degree of inattentiveness is more suspect, this analysis would not recognize the change. If such were the case, the result would be fewer plaintiff wins in the comparative era than otherwise, and the effects of the comparative law would be underestimated.

The extent of selection effects in the analysis can be judged, at least in part, from a profile of cases in the two periods. If there is a sharp discontinuity in that profile, the probability of significant selection effects is higher, and vice versa. Thus, a study of the change in case mix in the comparative period will be a part of the analysis. The first section of the next chapter examines the change in the mix of cases by liability category; and Appendix C examines other characteristics of the case mix.

V. ANALYSIS

This chapter presents the analysis in its three separate parts: the effects of comparative negligence on (a) case mix, (b) the probability of a plaintiff win, and (c) the award, given a plaintiff win. The liability analysis suggests that juries followed a partial comparative law when the old law was in effect, and estimates how close they came to a de facto comparative rule. The analysis of the awards shows surprising comparative reductions and suggests a selection effect of the comparative law.

THE EFFECT OF COMPARATIVE NEGLIGENCE ON CASE MIX

I examine case mix primarily because it has implications for the reliability of the results on the expected award. Small changes in the case mix suggest a random distribution of trials in the before and after period. The closer the sample to a random distribution, the greater confidence one can have in estimates about comparative's effect on the expected award. Conversely, the greater the changes in case mix, the greater the probability of a skewed sample, and the more results are dependent on the imperfect statistical controls of the model.

What might one expect to be the effect of comparative on case mix? The net effect is unclear because it is ruled by opposing forces.[1] On the one hand, the comparative law expands the legal rights of plaintiffs, and increases the expected award of at least some classes of plaintiffs, tending to drive up the volume of litigation (and trials) concerning that right. Even if the net effect on awards is minimal, parties, especially plaintiffs, may at first bring more cases to trial to test how juries operationalize the new law. The reduced risk of a defendant verdict encourages plaintiff experimentation. On the other hand, trial litigation should decrease as precedents build and jury behavior becomes more predictable. Further, the increased clarity of the law should narrow the range of possible outcomes, bringing parties

[1]For (the beginnings of) a general theory on trial caseload change, see Casper and Posner (1974), pp. 346ff.

closer together in bargaining, and, therefore, encouraging settlements.

The precise effect of the law will depend on the magnitude and timing of the conflicting forces, but an initial rise and eventual fall in the frequency of cases claiming plaintiff negligence is expected. Table 5.1 shows what actually happened in San Francisco between 1975 and 1980. Over the first five and one-half years of the comparative law, the number of cases involving plaintiff negligence increased slightly, by six percent. Although that increase represents the best estimate, the change is not statistically significant, and may be greater than zero only by chance. But taking the numbers as a true change, it appears the increase in "plaintiff negligent" cases came at the expense of "other party negligent" cases, which decreased sharply for unclear

Table 5.1

THE CHANGE IN CASE MIX IN THE COMPARATIVE ERA
BY LIABILITY CATEGORY

	Percent of Trials Under		
Liability Category	Contrib	Comparative	Both
	Summary		
No P negligence claim	40	34	37
P negligence claim	60	66	63
Total	100	100	100
	Detailed		
No defense	16	15	16
Nobody negligent	8	10	9
Other party negligent	15	8	12
Plaintiff negligent			
P much less than D	16	20	18
P less than D	14	16	15
P & D about equal	23	25	24
P more than D	8	5	7
Total	100	100	100
Number of Cases	358	317	675

Note: 'P' means plaintiff, and 'D' means defendant.

reasons. Within the "plaintiff negligent" category, the increase is slightly skewed toward slightly negligent plaintiffs.

Table 5.2 shows trends in plaintiff negligence during the comparative years, listing not only the frequency of plaintiff negligence claims, but also jury determinations of plaintiff negligence in special verdicts. Although the trend is not smooth, results suggest the frequency of plaintiff negligence trials is following the pattern suggested by the theory (initial rise, then decline).

In conclusion, the insignificant change in case mix in the before and after periods increases the reliability of our estimates about comparative's effect on the expected award. In particular, the fact that the sample of cases involving claimed plaintiff contribution didn't skew sharply towards higher or lower categories of plaintiff negligence,

Table 5.2

TRENDS IN PLAINTIFF NEGLIGENCE
AMONG COMPARATIVE ERA TRIALS

Year	Percent of Trials Involving Plaintiff Negligence As Measured By	
	Jury Decisions[a]	Defendant Claims[b]
1975	16	68
1976	38	62
1977	44	73
1978	39	61
1979	54	74
1980	28	53
1975-1980	37	66

[a] Measures frequency of jury determination of comparative in special verdicts; based on 239 guilty verdicts in the comparative era.

[b] Measures frequency defendant claimed plaintiff negligence in the 317 comparative era trials.

makes more plausible the assumption there was not great skewing within categories. Of course, this finding doesn't eliminate the possibility of selection effects, (and I will speak to that point as we proceed with the analysis description); but it does reduce the possibility that they importantly affect results.

THE EFFECT OF COMPARATIVE NEGLIGENCE ON LIABILITY

The liability model predicts the probability of a plaintiff victory with a high degree of reliability (see Appendix B for details). Each liability category has a statistically significant effect on the probability of a plaintiff win; that is, the probability that they appear different from zero by chance is very small. Further, as already demonstrated with frequencies, the estimated effects of the comparative law on the importance of plaintiff negligence are consistent with theory; the probability of a plaintiff win increases with decreasing plaintiff negligence and with a change from a contributory to a comparative negligence law. Finally, the small size and nonsignificance of the period indicator suggests that the liability variables fully control for differences between trials in the two periods. In this section I analyze exactly how juries make liability decisions under the two laws.

Using the results of the liability analysis, I estimated the probability of a plaintiff win, by negligence category, in both periods. In Table 5.3 these estimates appear in the middle columns, under the headings of "jury behavior;" blind to the dictates of the law, the numbers reflect only what juries decided. In contrast, the columns on the outside estimate the percentage of plaintiff wins that would have occurred if the respective laws had been strictly followed.

Under contributory negligence, plaintiffs are never supposed to win. Yet percentages in the first column are positive, because juries sometimes reject defendants' claim of plaintiff negligence. Under comparative negligence, plaintiffs should always win against negligent defendants; that is, defendants basing their defense on plaintiff negligence should fare no better with regards to liability than those claiming "no defense." The fourth column, nevertheless, shows less than

Table 5.3

LIABILITY RESULTS: JURY BEHAVIOR AND THE LAW

	Estimated Percent P Victory Under Contrib.		Comparative	
Relative P Negligence[a]	By Law[b]	Jury Behavior	Jury Behavior	By Law[c]
P much less than D	35	76	91	92
P less than D	27	58	82	92
P & D about equal	15	36	66	82
P greater than D	6	31	76	82

Source: Estimated from Logit analysis of 675 auto accident trials. See Table B-1 in Appendix B for detailed predictive equation.

[a] Categories based on claims of negligence and accident situation. See Chapter 4 for derivation.

[b] The positive percentages indicate instances in which the jury rejects claims of plaintiff negligence. Estimated rate of rejection taken from jury discussions in special verdicts; see Table 4.9.

[c] Assumes defendants should win only as often as those with no apparent defense as to liability.

a perfect plaintiff score because defendants sometimes have more than one defense.[2]

In the contributory era, juries neither completely barred partially negligent plaintiffs from recovery, nor completely ignored their carelessness; however, they were clearly more likely to deny recovery when plaintiffs' contributions were greater. The left two columns of Table 5.3 show juries' tendency toward a comparative rule for minorly negligent plaintiffs, and a contrib rule for highly negligent ones. In the case of the inattentive pedestrian (see the "P much less than D" row in Table 5.3) plaintiffs would have won an estimated 35 percent of the time under a strictly applied contrib rule, but 92 percent of the time under a strict comparative rule. Juries, in fact, decided for

[2] In addition, the functional form of the logit model makes predictions of close to 100 percent unlikely.

plaintiffs 76 percent of the time in the contrib era, a point more than two-thirds of the way between the two extremes {(76-35)/(92-35)=.72}. In cases of high plaintiff contribution (for example, when the driver in back sues the driver in front in a rear-end accident), plaintiffs would almost never win (6 percent of the time) under a strictly contrib rule, but quite often win (82 percent of the time) under a comparative rule. Juries, in fact, decide for plaintiffs in highly negligent categories 31 percent of the time under a contrib rule, a percentage about one-third of the way toward a comparative rule.

The importance juries attach to plaintiff negligence under contributory negligence might better be viewed by comparison--the importance of the "plaintiff negligent" defense compared to the "other driver negligent" defense. Take the left turn example described in Chapter 4, in which both a driver and his rider were suing a defendant who turned in front of them. The defendant, claiming the plaintiff's vehicle was speeding, had a stronger case against the plaintiff driver than the rider. In the case of the plaintiff driver, if he contributed even 1 percent to the cause of the accident under a contrib rule, he would recover nothing. However, in the case of the rider, he should collect unless his driver was fully 100 percent responsible for the accident.[3]

Thus, under contributory negligence a "plaintiff negligent" defense is superior to an "other driver negligent" defense. However, juries apparently treated the two defenses the same, as both rider and driver plaintiffs collected at nearly the same rate (see the nearly equal coefficients on the variables representing the two defenses in Table B-1 in Appendix B).

While this effect is surprising, it is not as robust as those derived from comparisons within the different levels of plaintiff negligence because there is a greater possibility of selection effect across types of defenses. Plaintiff drivers, knowing of the contributory rule, might bring relatively stronger cases to trial than riders.

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[3] Under the joint and several rule, any defendant is liable to a plaintiff for the entire amount of damages, even if as little as one percent responsible.

Under the comparative law, juries also appear unwilling to go to extremes, as they do not always ignore instances of high plaintiff negligence in assessing liability. Comparing the third and fourth columns of Table 5.3, juries have no trouble in consistently ruling for minorly negligent plaintiffs; but as the plaintiff contribution increases, juries appear to occasionally rule for defendants. However, the effect is small and not statistically significant. Further, it could be entirely explained by a selection effect; plaintiffs might have brought weaker cases to trial (within categories) in the comparative era.

Despite possible selection effects, one conclusion appears clear: juries mitigated the potential effects of the change to comparative by partially following that rule under the contributory negligence regime.

THE EFFECT OF COMPARATIVE NEGLIGENCE ON (NONZERO) AWARDS

Analysis Results

The award model, predicting the logarithms of plaintiffs' awards, appears to satisfy the linear model assumptions.[4] Further, all the background variables--on the amount of damages, seriousness of injury, type of parties, and type of case--behave as predicted, and awards decrease in the comparative period (see Appendix B for detailed model results). In fact, the extent of the decreases are rather surprising, as I shall shortly discuss.

However, results of the award analysis do not paint nearly as neat a picture as do those of the liability analysis, because the model appears underspecified. First, after taking into account all the background factors itemized above, including liability variables, the award model predicts compensation in the comparative negligence era to be 50 percent less than that in the contributory negligence era. One possible explanation is the rapid change reported in the composition of San Francisco juries, as the city's population increased in its proportion of reportedly more conservative upper-income individuals.

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[4] The residual distribution is approximately normal, and there is no evidence of heterogeneity of variance across different levels of either the dependent variable (awards) or the predominant independent variable (medical specials).

Second, independent of the downward pressure on awards caused by comparative reductions, an unanticipated upward pressure also exists, such that plaintiffs receive 20 percent more in each successfully higher negligence category. This cannot be explained by more serious injuries[5] or a greater frequency of "deep pocket" defendants in plaintiff negligence cases; those effects are controlled for in the model. Rather, an explanation must come from outside the current model framework. The quality of lawyering offers one of many possible explanations for the effect. Perhaps more persuasive and more successful lawyers tackle the more involved "plaintiff negligent" cases, and when they win, their skills lead to higher awards for their clients.

Such aberrations from the logic implied in the award model are of concern because they increase the possibility of a selection effect in comparative era cases; if the missing variables are correlated with how juries react to negligence laws, then estimates in the award analysis contain bias. Relating to the examples above, bias could occur if comparative era juries have different attitudes about negligence laws than juries under the old laws, or if a different mix of lawyers cause juries to react to negligence in a different way. Since I cannot correct for these possible biases, I only explain them, leaving to the reader the judgment of how they qualify results.

In the original analysis, before I discovered the simultaneous upward and downward pressure of plaintiffs' negligence on awards, it appeared that increasing plaintiff negligence exerted no effect on the size of the award. The difference between awards in the comparative and contributory eras was barely distinguishable (see Table B-2 in Appendix B for the specifics of those results).

To separately identify the opposing forces on the award from cases with plaintiff negligence, I entered as a new variable the actual percentage deductions to plaintiffs' awards that juries articulated in special verdicts. (See Table B-3 in Appendix B.) Results were surprising: negligent plaintiffs appear to receive reductions close to double what the special verdicts state. In Table 5.4 a range of

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[5] Since the measure of injury severity is itself based on a multivariate model, injuries could, in fact, be more serious in ways not controlled for in that analysis.

Table 5.4

ESTIMATED ACTUAL PERCENTAGE REDUCTIONS IN AWARDS VS THOSE QUOTED IN SPECIAL VERDICTS

Percent in Special Verdict	Actual Percent Reduction
5	9
10	17
25	39
50	66
75	86

Source: Estimated from regression analysis of 461 plaintiff wins in auto accident trials. See Appendix B for detailed equation.

Note: Special verdicts of 5 or 10 percent reductions are assumed to involve negligence category "P much less than D." The 25 percent special verdicts is assumed to involve category "P less than D"; the 50 percent verdict, "P & D about equal"; and the 75 percent verdict, "P greater than D."

exemplary percentage deductions quoted in special verdicts are listed at the left; and the corresponding true reduction (estimated by the model) listed at the right. Thus a plaintiff receiving a 10 percent reduction in his award because of the special verdict, actually receives more like 17 percent less than a similar plaintiff not alleged to bear part of the blame for the accident.

Though the explanation for the excessive reductions is open to interpretation, I speculate they indicate a problem in the implementation of the special verdict. Despite careful instructions, courts apparently do not succeed in having juries determine a gross award--one calculated without regard to the negligence of the plaintiff. Instead, juries hand the judge an award already discounted for plaintiff negligence; and the judge's further reduction of that award (according to the percent plaintiff negligence that the jury also specifies) represents an unintended penalty to the plaintiff.

The possibility that juries fail to determine a "gross" award in the special verdicts process does not seem surprising if one considers the predominantly subjective nature of plaintiffs' total damages. Typically, well less than half of total damages are reimbursements for specific medical expenses or wage losses. Rather, the majority of the award is comprised of general damages, a subjective amount which covers "pain and suffering" as well as other intangible losses particular to the individual circumstances of a particular plaintiff with a specific injury. The extent of plaintiffs' contribution to their own injuries is just one of myriad subjective factors that juries take into account to arrive at award amounts. Asking juries to isolate one of those factors may violate the cognitive process by which they arrive at a single number.

In summary, the analysis suggests that the implementation of special verdicts under the comparative law results in two deductions for plaintiff negligence--one a discount juries arrive at in determining the "gross" award required in the special verdict, and the other the reduction calculated by the judge, also as required in the special verdict process.

Award Predictions

Because juries do not specify, and I was unable to estimate, deductions for partially negligent plaintiffs in the contributory negligence era,[6] I restricted predictions about the new law's effects to awards in comparative era trials.[7] (See Table 5.5.) Thus, in Table 5.5,

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[6] I tried to estimate jury reductions for partial negligence in the contributory era by fitting a two-staged model of jury decisions in the comparative era. Completely parallel to the design of the main analysis in this report, the model sought, first, an estimate of the probability of a reduction, and second, an estimate of the amount of the reduction, given one occurred. However, the effort yielded poor results for three reasons. First, the sample was much smaller--there were only 88 reductions for the second part of the model. Second, the factors determining the comparative decision are highly correlated with those affecting the liability decision. Third, independent factors not used elsewhere were not available. It is worth noting, however, that the results I did obtain still contained the double deductions finding of the main analysis.

[7] See Table C-1 in Appendix C for a summary of the characteristics of comparative era trials.

Table 5.5

REDUCTIONS IN NON-ZERO AWARDS DUE TO COMPARATIVE NEGLIGENCE

	Estimated Average Awards ($) in Comparative Era Trials Assuming a Law of			
	Contrib	Comparative		Percent Reduction due to Comparative
Relative P Negligence(a)	Estimated Actual(b)	Implied by Special Verdict(c)	Estimated Actual(d)	
P much less than D	28,900	28,300	26,200	7
P less than D	51,000	45,900	40,100	21
P & D about equal	68,000	63,800	53,700	21
P greater than D	103,900	106,200	78,200	25

Source: Estimated from the regression analysis of 461 plaintiff wins in auto accident trials, applied to the 152 winning plaintiffs in the comparative era with allegations of contribution against them. See Table B-3 in Appendix B for detailed predictive equation.

(a) Categories based on claims of negligence and accident situation. See Chapter 4 for derivation. 'P' means plaintiff and 'D' means defendant.

(b) Assumes juries deduct 85 percent of what they specify in special verdicts (see text for explanation). Also awards for plaintiffs with a reduction are weighted by their estimated probability of plaintiff victory under contrib.

(c) Estimates comparative awards using percentage deductions indicated in the special verdict.

(d) Estimates comparative awards using the "double deductions," implied by the analysis.

I examine the awards of the 152 winning plaintiffs in the comparative era who had allegations of negligence against them.

My objective is to estimate how much the comparative law changes the average award in each negligence category. Theoretically, the average of non-zero awards should be lower under comparative, because the mix of cases will include more plaintiffs with partial awards. Under contrib, some of the plaintiffs with partial awards under the new law will lose and not be considered when awards are averaged.

A glance at the column to the far right in Table 5.5 shows that the award averages behave as theory would predict (they go down under comparative). In the remainder of this section I explain how those figures were calculated.

The average of what the plaintiffs actually received under comparative is shown in the third column of Table 5.5. Note that even after the double deduction, the size of the award increases with increasing plaintiff negligence. This finding underscores the steep rise in the value of trials with increasing plaintiff negligence.

In the second column, I show what average awards in each liability category would have been had plaintiffs avoided the jury discounting of the "gross" award, and only incurred the single reduction implied by the special verdict. Note that in comparing columns two and three, only 88 of the 152 plaintiffs have different awards--those in which the jury determined a comparative reduction was appropriate. In the 64 remaining cases, the jury determined that, despite the defendant's allegations, the plaintiff had not contributed to his own injury.

In the first column of Table 5.5, I estimate what plaintiffs would have received if the juries had been instructed in contributory, rather than comparative, negligence. Again, though I average all 152 awards, I manipulate those of only the 88 plaintiffs with reductions. Some of the 88, predominantly the more highly negligent ones, would receive nothing under contrib and thus not be considered in the average. The liability equation (see Appendix B) determined the likelihood each of the 88 plaintiffs would lose. When awards were given, I assumed juries would give less due to the plaintiffs' contributions. Further, I assume the percentage reduction would equal 85 percent of what juries specified in the special verdict.

The 85 percent figure was derived from the implications of the award analysis discussed in the previous section. It corresponds to the implied discounting juries applied to the "gross" award under special verdicts. For example, in Table 5.4 I estimated that a 10 percent reduction specified in the special verdict resulted in an approximate 17 percent actual reduction. That 17 percent could occur only if juries discounted the award 8.5 percent before the 10 percent reduction was applied [(100 - 10%) x (100 - 8.5%) = 17%].

Thus, because I have no better basis for making the determination, I assume that juries would use the same discounting system under contrib that they appeared to actually implement under comparative. However, because this assumption is rather speculative, I perform a sensitivity analysis in the conclusion section (see Chapter 6), showing the effect of alternative assumptions on plaintiffs' expected awards.

The final column of Table 5.5 compares the figures in the first and third columns, showing the estimated percentage reduction in the average award due to the new law. As one would expect, the percentage difference increases with relative plaintiff negligence. The low is 7 percent for minorly negligent plaintiffs, and the high is over 25 percent for plaintiffs who sue the drivers of vehicles they rear-end (that is, for highly negligent plaintiffs).

VI. CONCLUSIONS

Having analyzed liability and award effects individually, I now combine the results to answer the questions posed by the research: How did the law of comparative negligence affect plaintiffs' expected awards? Results show that although juries mitigated the large potential increase in awards that might have resulted from a comparative law, the actual increase was still considerably higher than what current conventional wisdom would predict.

The expected award is calculated from the product of the probability of a plaintiff win, and the average award given a win. To add a perspective to the calculations, I examine not only actual effects but also potential or theoretical effects; that is, not only how juries actually behave but also how the law tells them to behave. To make the calculations, I use the comparative era case mix, observing what actually happened under the comparative law, then estimate what would have happened had the contrib law continued through the 1970s.

Table 6.1 contains the framework for presentation of results. Across the top, I list the separately modeled components of the expected award: the probability of a plaintiff win, and the size of the award given a win. Down the side, I list the type of law, and the assumption about how the law gets implemented--as implied by the legal theory, or as per actual jury decisions. The interior numbers are estimated by the models used in this analysis. The numbers in the bottom row and outside column are calculated as implied by their labels. The bottom line of the analysis appears in the lower right hand corner.

The potential effect of switching to comparative was quite large for comparative era trials--awards under a properly followed comparative rule would have been 92 percent higher than under a properly followed contributory rule.[1] The large potential follows from the higher value of cases with plaintiff negligence. Even after deductions for partial

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[1] The potential is higher than that calculated earlier in Table 3.1 because that table did not account for the "double deduction" effect in the comparative awards.

Table 6.1

POTENTIAL VS. ACTUAL EFFECTS OF THE LAW OF COMPARATIVE NEGLIGENCE ON PLAINTIFFS' EXPECTED AWARDS: COMPARATIVE ERA TRIALS

Type of Law and How Juries Implement	Comparative Era Trials: Fraction With Plaintiff Win	Comparative Era Trials: Average Award Given 'P' Win $(000)	Comparative Era Trials: Expected Award $(000)
Contributory Negligence			
Follow Legal Theory	.45	38.7	17.4
Actual	.59	39.7[a]	23.4
Comparative Negligence			
Follow Legal Theory	.82	41.7	34.2
Actual	.75	37.4	28.1
Percent Change			
Potential	82.2	7.8	96.1
Actual	27.1	- 5.8	20.1

Source: Estimated using logit and regression analyses of 675 auto accident trials, applied to the 317 trials in the comparative era.

[a] Assumes juries deduct 85 percent of what they specify in special verdicts. Also, to account for plaintiffs who would receive nothing under contrib, awards for plaintiffs with a comparative reduction are weighted by the estimated probability of a plaintiff victory in that case under contrib.

fault (which have been shown to be "double" what they appear), negligent plaintiffs net more than those against whom other defenses are raised.

In sharp contrast, the actual effect of switching to comparative was much smaller--juries determined expected awards in the comparative era only 20 percent larger than they would have under a contributory negligence law.

Actual effects differed so extremely from potential effects because at every opportunity juries acted to mitigate effects of the change. First, during the contrib era, juries refused to consistently bar

partially negligent plaintiffs from recovery. Had the comparative era trials been decided by juries instructed in contributory negligence, they would have won less often (instead of winning 75 percent of the time as they actually did, they would have won 59 percent of the time); but had those juries been forced to follow the contrib rule in every case, even less, only 45 percent, would have won.

Second, juries apparently refused to always go to the other extreme, making awards to all negligent plaintiffs in the comparative era, regardless of how high their percentage fault. Plaintiffs might have won 82 percent of the time instead of 75 percent, had that been the case. However, note that this effect has alternative explanations (i.e., it could have occurred by chance or might reflect a selection effect in the data), and therefore the conclusion is rather tentative.

The third instance in which juries mitigated the effect of change in negligence laws is in penalizing negligent plaintiffs with double deductions, presumably a consequence of how the comparative law was implemented. The phenomenon had about a 10 percent effect on awards; instead of averaging slightly more than $44,000, awards averaged only $39,500 (see Table 6.1).

The estimate of a 20 percent "bottom line" in Table 6.1 has rather large variance, because assumptions in calculating these awards could have relatively large effects. For example, Table 6.1 assumes that juries under a contributory law would deduct 85 percent of what they specify in special verdicts. Some observers might reasonably argue the percentage is smaller, perhaps 50 percent. In that case the "bottom line" would reduce to a 16 percent increase in the average plaintiff award. To go to the extreme, no deductions in awards under contrib, the bottom line would reduce to 10 percent.

Table 6.2 shows the distribution of the estimated actual effects by negligence category. The first four columns of the table show the two components of the expected award under the two laws (note these numbers are merely copied from previously presented tables), to make explicit how the expected awards for the two laws (in the fifth and six columns) were calculated. The last column, to the far right, shows the percentage changes by negligence category.

Table 6.2

DISTRIBUTION OF THE CHANGE IN PLAINTIFF'S EXPECTED AWARD BY NEGLIGENCE CATEGORY

	Estimated Average Verdicts By Type Of Law						
	Fraction P Win(a)		Avg. Award Given Win $(000)(b)		Expected Award $(000)		
Negligence Category	Contrib	Comparative	Contrib	Comparative	Contrib	Comparative	Percent Change
P much less than D	.76	.91	28.9	26.2	22.0	23.8	8.2
P less than D	.58	.82	51.0	40.1	29.6	32.9	11.1
P & D about equal	.36	.66	68.0	53.7	24.5	35.4	44.5
P greater than D	.31	.76	103.9	78.2	32.2	59.4	84.5

Source: Estimated using logit and regression analyses of 675 auto accident trials, applied to the 208 trials in the comparative era with plaintiff negligence an issue.
(a) Numbers come from Table 5.3.
(b) Numbers come from Table 5.5.

The percentage changes in Table 6.2 show gains by plaintiffs in all negligence categories, with relatively higher gains for highly negligent plaintiffs. In the lowest category, where plaintiffs are only minorly negligent, awards increased by 8 percent; but in the highest category, in which the plaintiff is more negligent than the defendant, the gain is almost 85 percent. Note, however, that higher percentage gains do not necessarily translate into higher absolute gains.

Figures 6.1 and 6.2 graphically show the effects of switching to a comparative rule over all combinations of plaintiff and defendant negligence. Figure 6.1 shows the potential (or theoretical) effects of switching to comparative; it is an exact reprint of Figure 3.2. Figure 6.2 shows the actual effects of the change. The actual effects appear to match most closely with hypothesis A shown earlier in Figure 3.3. Under that hypothesis, juries partially ignored the contributory negligence law at all levels of plaintiff negligence. The added twist to the hypothesis, pictured by itself in panel b of Figure 6.2, is the "double deduction" that apparently occurs under the comparative rule.

Note that the difference between the old and the new law pictured in Fig. 6.2 (c) appears to represent less than 20 percent of the shaded area of Figure 6.1 (a). That distortion occurs because the figure implicitly assumes that awards in plaintiff negligence cases are no higher than others; in fact, we have seen that awards for cases in which plaintiff contribution is an issue tend to be much higher than average under either negligence law.

This result, that partially negligent plaintiffs receive more than others, suggests the effect of comparative among settlements would be smaller than what was calculated here among trials. In general, going to trial is correlated with large awards; in fact, we found that about 2 percent of the trials accounted for over 40 percent of all the money awarded in San Francisco civil courts in the 1970s (see Shanley and Peterson (1983), p. 29). To the extent that those large awards involve an issue of plaintiff contribution, the comparative effect among trials is larger than its effect among settlements.[2]

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[2] Theory also argues that it is the large cases involving plaintiff contribution that go to trial; in large cases there is more room for disagreement on a compromise award.

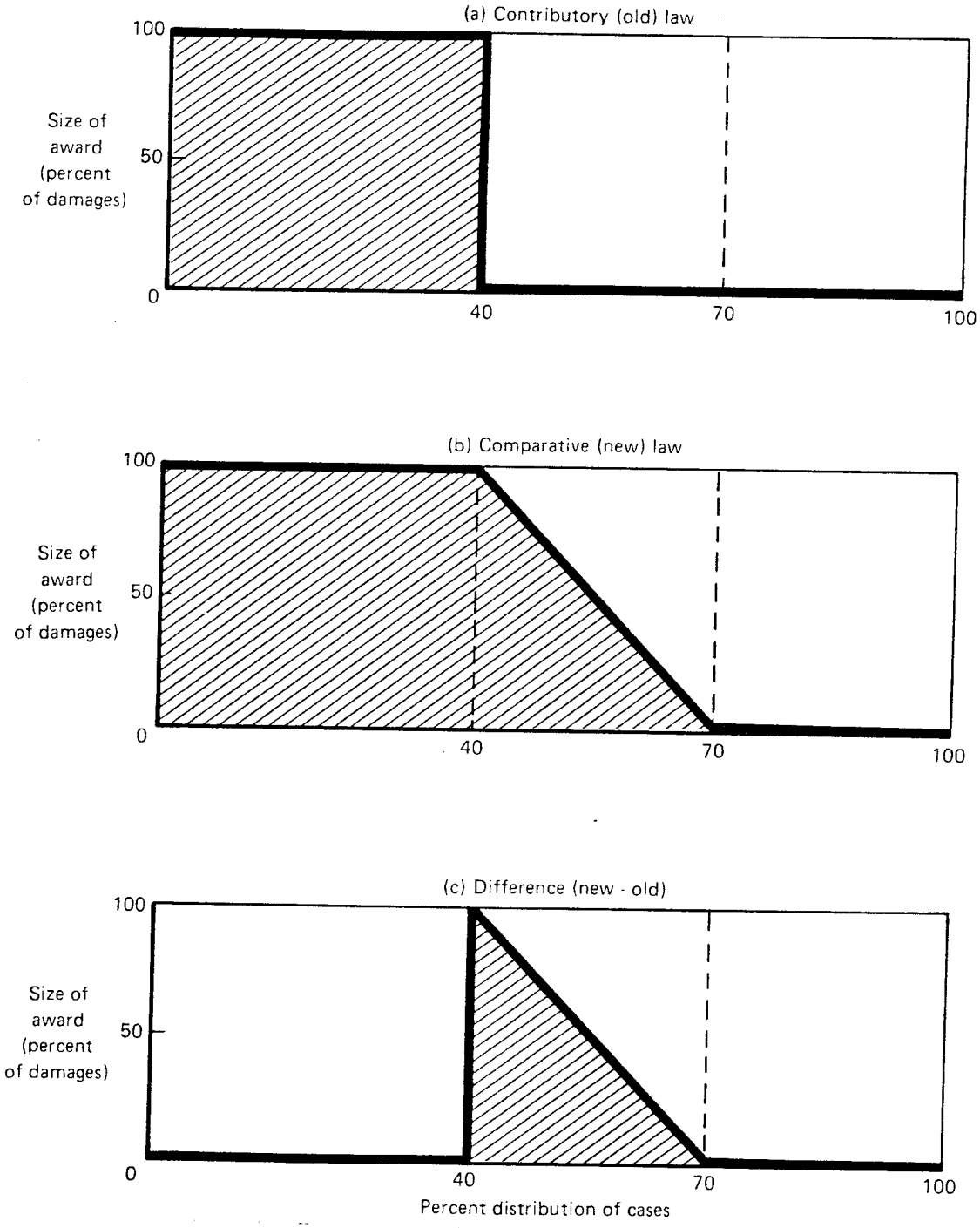

Fig. 6.1 — Theoretical difference in awards under contributory and comparative negligence

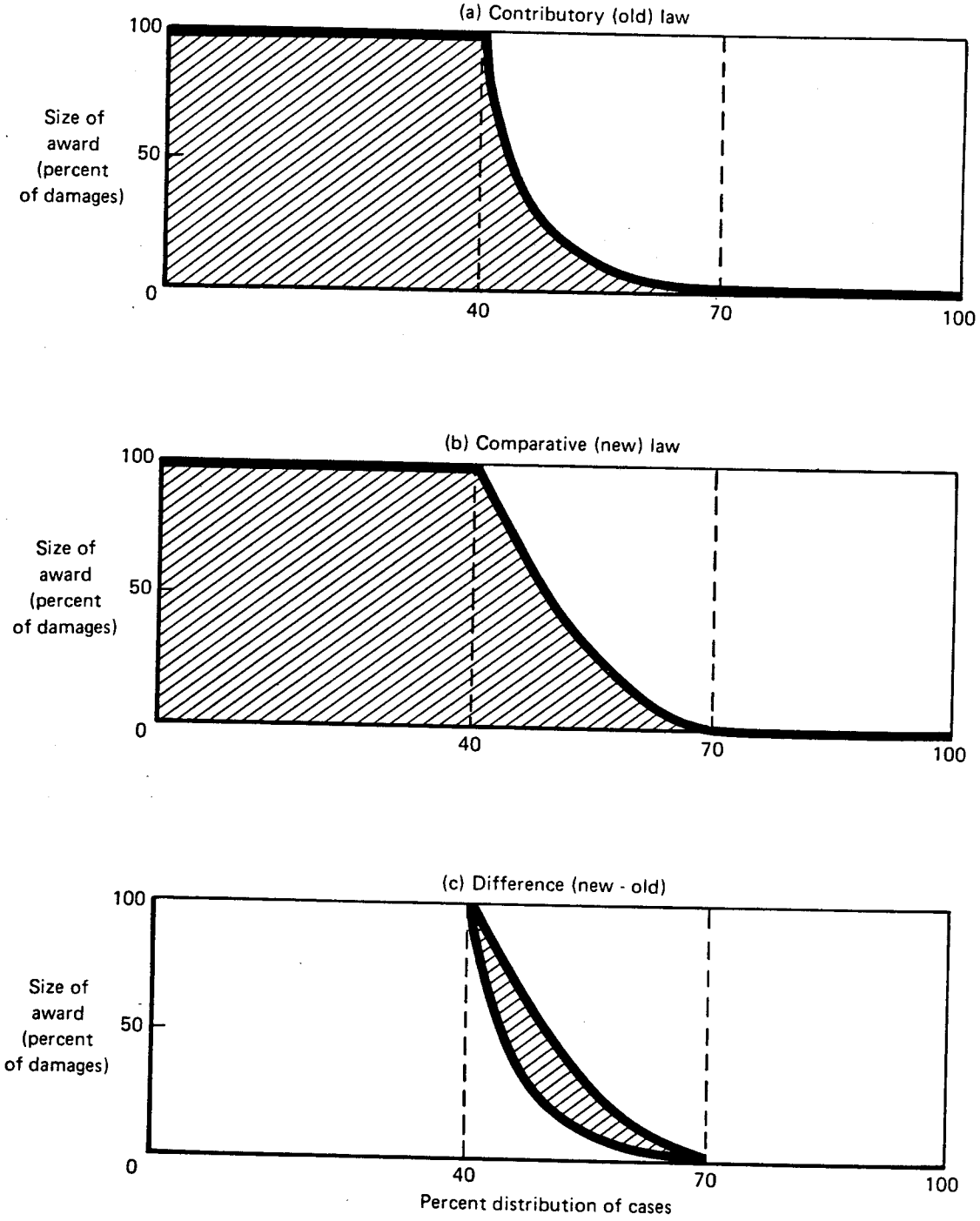

Fig. 6.2 — Actual difference in awards under contributory and comparative negligence

VII. POLICY IMPLICATIONS

This research began by addressing the policy concerns of legislatures and courts considering switching negligence laws. The analysis has given a tentative answer to the question, "How much more do plaintiffs receive under comparative negligence?" However, the findings have implications not only for states with contributory laws, but also for those who already have comparative laws. Further, there are lessons for anyone contemplating legal change involving civil juries.

To the nine states currently under a contributory negligence law, I offer the findings described in this document concerning the expected trial award for plaintiffs. The large potential effects, a 92 percent increase in awards, helps explain why some might reasonably predict extremely large effects from a comparative negligence law. The actual effects are much smaller, but still may present a problem to lawmakers considering a switch to comparative, especially if the 20 percent increase in awards has anywhere near that effect on insurance rates.

In making such judgments, lawmakers should keep in mind that if the law is implemented properly, without double deductions, then the 20 percent estimated increase in trial awards rises to 34 percent. However, they should also note that several factors articulated in the conclusions argue that the effects measured here represent an upper bound, and that effects over all civil suits would be smaller. The existing research on settlements, which suggests a much smaller effect, supports that argument. Further, this research tested comparative under extreme conditions, in a pure comparative law context. Most states choose modified comparative laws, which would, of course, affect awards less.

Other factors might lead to greater or lesser effects than those measured here. For example, California jurors might differ from those in other states. If California jurors are more liberal, they might have been closer to a de facto comparative rule in the early 1970s than most control states are today; in that case, the change in expected

hand, California jurors are relatively less liberal regarding negligence rules, then the effect in other states would be smaller. Other research suggests California jurors may not live up to their liberal reputation (see Shanley and Peterson, forthcoming).

Finally, lawmakers may want to account for comparative's effect in other areas of law. Although automobile accidents account for over half of all civil trials, the awards in product liability and work injury cases, taken together, account for a greater percentage of total awards (see Shanley and Peterson (1983), Table 6, p. 17). Those case types may also account for a large proportion of the increase in plaintiff awards due to comparative.

To the 41 states with a comparative law, I point to the findings that plaintiffs appear to be penalized with "double deductions" with the implementation of special verdicts. To insure proper implementation, states might review their rules on special verdicts and the instructions given to juries. However, since California's appear quite clear, controlled experiments might be required to discover exactly why negligent plaintiffs receive less than the law intended. Such experiments might vary instruction wording and type of special verdict to determine which achieves the desired result.

On a broader theme, this research suggests that those who contemplate a legal change need to understand how juries will react to that change. Changes that contradict current community values will likely have distorted effects. Further, instructions used to implement the desired change require careful consideration, and perhaps testing, before being used--or again, actual effects may differ considerably from those intended.

APPENDIX A

To conduct this research, additional information on the parties' relative negligence was required. In Table A.1, I show the form developed to collect the data.

APPENDIX A:

FORM FOR COLLECTION OF NEGLIGENCE INFORMATION

1.What type of case?(circle one)

01 Rear end
Intersection
02 Uncontrolled
03 Stop sign
04 Traffic light
Turning
05 Left across, oncoming
06 Other
07 Head-on or wrong side
08 Backing
09 Passing
10 Ricochet
11 Failure to Yield
12 Other--list_____

2.Negligence information present?
1 no

3.Type of plaintiff--check
1.driver 4.survivor
2 rider 5.other--list
3 pedestrian _____

4.P negligence an issue?
0 no
1 yes

5.Positional Negligence?--circle one.
1 against Plaintiff
2 against Defendant 2 2 2
3 disputed 3 3 3
0 none

5.OTHER INFRACTIONS(all that apply)(IF MULT. D)

Pl	Df	RECNO	Da	Db	Dc
0	0	None	0	0	0
1	1	Other driving infraction	1	1	1
1	1	Impaired--check	1	1	1
1		Pedestrian infraction			
1		Rider infraction			

6.DOES PTY AGREE ON OTH INFRACTION?

1	1	YES	1	1	1

7.TYPE OF OTHER DRIVING INFRACTION

1	1	Speeding	1	1	1
1	1	Reckless driving	1	1	1
1	1	Lost control	1	1	1
1	1	Impr stop,pass,turn,maneuver	1	1	1
1	1	Failure to stop or yield	1	1	1
1	1	Intntv,neg lkt,no defs actn	1	1	1
1	1	Oth failure to use ord.care	1	1	1
1	1	Other-list_____	1	1	1
1	1	New code-list_____	1	1	1

8.DEFENSES-no prox cause(no excuses)

Pl	Df				
0	0	None-other	0	0	0
1	1	Conditions responsible	1	1	1
1	1	Phantom responsible	1	1	1
1	1	Def maneuv-opst pty neg	1	1	1
1	1	Infraction slight	1	1	1
1	1	2ndary cause at best	1	1	1
1	1	Defective product	1	1	1
1	1	Other--list _____	1	1	1
1	1	New code-list_____	1	1	1

9.EVIDENCE

Pl	Df		Da	Db	Dc
0	0	None			
1	1	Citation-chk	1	1	1
1	1	Eye wit add	1	1	1
1	1	Physical	1	1	1
1	1	Police test.	1	1	1
1	1	Oth-list_____	1	1	1

10.RATE BEHAVIOR IMPLIED BY INFRACTIONS

0		none claimed			
1	1	minor infract.	1	1	1
2	2	poor	2	2	2
3	3	very poor	3	3	3
4	4	can't tell	4	4	4

Minor
Very poor
speeding(10+)
drunk
reckless
others-list

11. TYPE OF DISPUTE

	1	Factual only	1	1	1
	2	Normative only	2	2	2
	3	Combined	3	3	3
	0	Awd only	0	0	0

12. COMPARING NEGLIGENCE

	0	Not clear	0	0	0
	1	D>P	1	1	1
	2	D<P	2	2	2
	9	PNEG not issue	9	9	9

APPENDIX B

Detailed Analysis Results

This Appendix reproduces the results of the multivariate analysis used in preparing this report. A logit model was used to estimate the impact of negligence variables on the probability of a plaintiff victory. A regression model was used to estimate the impact of the independent variables on the size of plaintiff awards. The two regression analyses reflect the difference between the initially proposed model and the one finally used in the analysis. See Chapter 5 for discussion of each set of results.

Table B-1

LOGIT ANALYSIS RESULTS FOR THE PREDICTION OF THE PROBABILITY OF PLAINTIFF VICTORY IN AUTO ACCIDENTS 1970-1980

Independent Variables	Coefficent	t
Constant [a]	2.728	8.3
Ordinary defendant negligence	- .876	-4.0
Other person negligent	-1.026	-6.3
No person negligent	-1.095	-4.1
Plaintiff negligence		
Minor	-1.222	-2.8
Ordinary	-2.104	-5.6
High	-2.343	-4.4
Plaintiff negligence, comparative era		
Minor	1.136	1.8
Ordinary	1.209	2.7
High	1.974	2.5
Comparative era	- .315	- .9
Sample Size = 675	Successes = 461	Chi-Sq = 143.0

[a] Estimate for case with high defendant negligence and no defense as to liability.

Table B.2

INITIAL REGRESSION RESULTS FOR THE LOGARITHM OF AWARD IN AUTO ACCIDENTS 1970-1980

Independent Variables	Coefficient	t
Constant[a]	2.785	3.5
Background characteristics		
Ln (Estimated medical specials)	.843	8.4
Ln (Estimated lost time specials)	.042	1.8
Ln (Est. lost time specials-females)	- .023	-1.2
Death action case	-1.309	-1.7
Deep pocket defendant	.563	3.6
Number of plaintiffs in case	- .219	-2.2
Number of defendants in case	.154	1.2
Liability characteristics		
Other person minorly negligent	.391	- .9
No person negligent	.131	.7
Relative plaintiff negligence	.078	.9
Rel. plaintiff neg., comparative era	- .025	- .2
Period indicator		
Comparative era	- .536	-2.7
R^2 = .28 F = 14.42 N = 458		

[a] Estimated for individual plaintiff in case where defense is that another person was ordinarily or highly negligent.

Table B-3

FINAL REGRESSION RESULTS FOR THE LOGARITHM OF AWARD IN AUTO ACCIDENTS 1970-1980

Independent Variables	Coefficient	t
Constant[a]	2.635	3.2
Background Characteristics		
Ln (Estimated medical specials)	.886	8.9
Ln (Estimated lost time specials)	.041	1.8
Ln (Est. lost time specials-females)	- .021	-1.1
Death action case	-1.250	-1.6
Deep pocket defendant	.557	3.7
Number of plaintiffs in case	- .236	-2.4
Number of defendants in case	1.428	1.2
Liability Characteristics		
Other person minorly negligent	- .354	- .8
No person negligent	1.268	.7
Rel. plaintiff neg., contrib era	.075	.9
Rel. plaintiff neg., comparative era	.217	2.2
Percent reduction in special verdict	-1.796	-3.8
Period Indicator		
Comparative era	- .516	-2.6
R^2 = .30	F = 14.80	N = 458

[a] Estimate for individual plaintiff in case where defense is that another person was ordinarily or highly negligent. Also, constant term has been corrected for the retransformation bias associated with loglinear regression models.

APPENDIX C

This appendix presents descriptive statistics on trials under contributory and comparative negligence.

Table C-1

CHARACTERISTICS OF COMPARATIVE ERA TRIALS
BY JURY DECISION

Item	Plaintiff Win, by Percentage Reduction				Plaintiff Loss	All Cases
	None	0-25	26-50	51-99		
			Background Characteristics			
Average medical specials ($)	2,200	2,300	2,400	4,700	2,800	2,500
Average lost time specials ($)	6,200	6,300	6,200	11,800	10,300	7,600
With business defendant(s) (%)	26	31	38	30	38	31
Avg. plaintiffs in case (num)	1.7	1.3	1.1	1.2	1.4	1.5
Avg. defendants in case (num)	1.4	1.4	1.5	1.3	1.5	1.5
			Plaintiff Liability Claimed (%)			
None	56	0	0	0	32	34
Minor	17	49	31	10	10	20
Ordinary	26	46	55	75	51	40
High	1	5	14	15	7	5
Total	100	100	100	100	100	100
			Defendant Liability claimed (%)			
Ordinary	19	15	45	80	64	36
High	81	85	55	20	36	64
Total	100	100	100	100	100	100
			Number of Cases			
Number of Cases	151	39	29	20	78	317

Notes: See Chapter IV for definitions of liability categories. All specials expressed in 1979 dollars.

Table C-2

CHARACTERISTICS OF TRIALS BY NEGLIGENCE LAW
AND CLAIM OF PLAINTIFF CONTRIBUTION

Characteristic	Contrib (a)	Comparative (b)	Ratio (b ÷ a)
Trials With Claim of Plaintiff Contribution			
Percentage of all trials (%)	60	66	1.1
Average medical specials ($)	2,500	2,800	1.1
Average lost time specials ($)	6,500	8,300	1.3
With business defendant(s) (%)	43	31	.7
Avg. plaintiffs in case (num)	1.2	1.2	1.0
Avg. defendants in case (num)	1.4	1.4	1.0
Trials With Other Defenses Only			
Percentage of all trials (%)	40	34	.9
Average medical specials ($)	2,100	2,000	1.0
Average lost time specials ($)	5,700	6,000	1.1
With business defendant(s) (%)	47	30	.6
Avg. plaintiffs in case (num)	1.9	1.9	1.0
Avg. defendants in case (num)	1.5	1.6	1.1
All Trials			
Percentage of all trials (%)	100	100	1.0
Average medical specials ($)	2,300	2,500	1.1
Average lost time specials ($)	6,200	7,600	1.2
With business defendant(s) (%)	44	31	.7
Avg. plaintiffs in case (num)	1.5	1.5	1.0
Avg. defendants in case (num)	1.4	1.5	1.1

Note: All specials expressed in 1979 dollars.

Table C-3

CHARACTERISTICS OF TRIALS BY NEGLIGENCE LAW
AND RELATIVE PLAINTIFF LIABILITY

Characteristic	Contrib (a)	Comparative (b)	Ratio (b ÷ a)
P much less than D			
Percent of trials with Pla. neg. claim	26	31	1.2
Average medical specials ($)	2,900	2,300	.8
Average lost time specials ($)	9,100	9,200	1.0
With business defendant(s) (%)	50	22	.4
Avg. plaintiffs in case (num)	1.1	1.3	1.2
Avg. defendants in case (num)	1.5	1.3	.9
P less than D			
Percent of trials with Pla. neg. claim	23	24	1.0
Average medical specials ($)	1,900	2,200	1.2
Average lost time specials ($)	5,000	6,100	1.2
With business defendant(s) (%)	27	28	1.0
Avg. plaintiffs in case (num)	1.2	1.3	1.1
Avg. defendants in case (num)	1.4	1.3	.9
P and D about equal			
Percent of trials with Pla. neg. claim	38	38	1.0
Average medical specials ($)	2,400	3,400	1.4
Average lost time specials ($)	6,200	8,400	1.4
With business defendant(s) (%)	49	37	.8
Avg. plaintiffs in case (num)	1.1	1.2	1.1
Avg. defendants in case (num)	1.3	1.4	1.1
P more than D			
Percent of trials with Pla. neg. claim	13	8	.6
Average medical specials ($)	2,800	3,700	1.3
Average lost time specials ($)	5,000	11,000	2.2
With business defendant(s) (%)	36	50	1.4
Avg. plaintiffs in case (num)	1.3	1.1	.8
Avg. defendants in case (num)	1.1	1.7	1.5

Note: 'P' means plaintiff and 'D' means defendant. See Chapter IV for definitions of relative plaintiff liability categories. All specials expressed in 1979 dollars.

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